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BRITISH MEDICAL JOURNAL

LONDON SATURDAY AUGUST 28 1948

THE REDUCTION IN DENTAL CARIES IN 5-YEAR-OLD LONDON SCHOOL-CHILDREN (1929-47)

BY

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The present paper is a continuation of a series describing the dental condition of 5-year-old London County Council school-children in 1929, 1943, and 1945 (Mellanby and Coumoulos, 1944, 1946). Between July and the end of October, 1947, 1,590 such children were examined with the object of finding whether the improvement observed in 1943 and 1945 had been maintained. The children lived in the same areas of London, and in the majority of cases attended the same schools as those used for the earlier surveys. A few of the schools previously visited were no longer available; substitutes in the same localities were then provided by the London County Council. As before, only children who had attained their fifth birthday but had not yet reached their sixth were selected, the average age being the same as in the other surveys. Although the presence of any permanent teeth erupting or erupted was recorded, this report refers only to the deciduous dentition.

In this 1947 survey the methods and standards adopted were similar to those used previously, full details of which can be found in the earlier papers.

Methods

Structure.—The structure of the individual teeth of each child was assessed according to the method devised and first used by M. Mellanby as early as 1923 and since then also employed on numerous occasions by others, including King, Coumoulos, Deverall, H. Mellanby, and Davies.

In essence the method consists in rubbing the labial surface enamel of each tooth with a fine probe of standard size and sharpness (S.S. White Stainless No. 37). After some practice it is possible to grade teeth in the mouth by the smoothness or roughness felt with the probe. It was shown many years ago that this external enamel texture could be correlated with good and poor microscopic structure (M. Mellanby, 1934). On sectioning, smooth teeth showed what were judged to be well-calcified enamel and dentine, whereas external roughness was usually associated with a less well-calcified minute structure, in particular with dentine containing interglobular spaces. The various macroscopic grades of surface roughness or defect are referred to as M-Hypoplasia (M-Hy) to distinguish them from gross or "textbook" hypoplasia (G-Hy), which is the only type whose existence is commonly recognized by dentists. Gross hypoplasia, the aetiology of which is not fully understood, is uncommon in deciduous teeth in this country; it is readily visible to the naked eye, the teeth so classed having obvious enamel pits or, in some instances, areas from which the enamel is lacking.

In surveys of this kind there are always some teeth whose structure it is difficult or even impossible to grade. This situation may arise, for instance, when a tooth has some structural defect which does not correspond to any of the grades described below. These teeth are included in Tables under the heading "Hy unclassified." A small proportion of teeth were so carious and others had such heavy deposits of tartar over certain areas that no opinion could be formed about their original surface structure. Where for either reason it was impossible to make a satisfactory estimate of the average structure the teeth are recorded as being present in the mouth but are not included in the structure tables.

By the probe method described, each tooth whose structure could be assessed was graded according to the following symbols:

Hy_0: No hypoplasia; smooth shiny surface—good structure.
$M\text{-}Hy_1$: Slightly rough surface—slightly defective tooth.
$M\text{-}Hy_2$: Rougher surface—definitely defective.
$M\text{-}Hy_3$: Very rough—very defective.
G-Hy: All varieties of gross or "textbook" hypoplasia.

Caries.—Each tooth was examined for caries with a standard probe (S.S. White Stainless No. 12) and illuminated mirror.

Any decay that could be diagnosed by this method was graded as 1, 2, or 3. Grade 1 included very early and suspected fissure and approximal caries and cavities up to the size of a pin-hole; grade 2 included all cavities from pin-hole size up to one-quarter of the crown; and grade 3 contained those teeth with more than one-quarter of the crown decayed, including those of which only the roots were left, and all missing canines and molars, which were assumed to have been extracted on account of caries. Obvious undermining decay was taken into account in judging the size of a cavity. Any incisors not present were counted as naturally shed.

A child's dentition was regarded as caries-free only when no caries, active or arrested, was recorded on the chart. A mouth containing one, two, or three teeth which were included in grade 1 caries, but none in the other grades, was described as being "almost caries-free." This system of classification was adopted in order to obtain figures which could be compared with those obtained in the 1929 survey, when so few children were completely caries-free, according to the above standards, that the two groups "caries-free" and "almost caries-free" were combined; even so the total was then only 4.7%.

Other Conditions.—Besides structure and caries, a number of other conditions were noted for each mouth. These included the arrest of the carious process, treatment of caries, mottling of enamel, the state of the mouth, spacing of the teeth, obvious tartar, gingivitis, occlusion, attrition, and the presence or absence of stain, but not all these conditions are considered in this report.

General Results

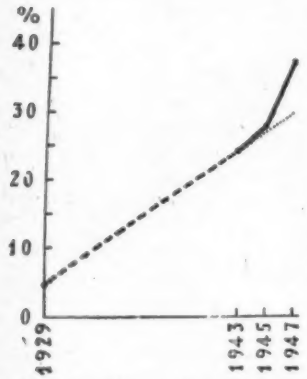
Before the detailed analysis of the data obtained in the latest survey is considered in relation to that of the earlier investigations a brief general comparison may be made.

TABLE I.—*Percentages of Caries-free Children*

Year	Total No. of Children Examined	% Caries-free	% Almost Caries-free	Total %
1929	1,293	—	—	4·7*
1943	1,870	14·9	9·3	24·2
1945	691	24·2	3·9	28·1
1947	**1,590**	**28·1**	**9·4**	**37·5**

* Percentages of caries-free and almost caries-free children not separately estimated in 1929.

The number of children whose dentitions were of good structure showed obvious improvement from survey to survey, and the upward trend observed in 1943 and 1945 in the proportion of children who, according to the probe and mirror method, could be described as caries-free or nearly so continued in 1947 (see Table I and Graph). It was found that, whereas only 4.7% of the children examined in 1929 could be so classed, the figure had risen in 1943 to 24.2%, in 1945 to 28.1%, and in 1947 to 37.5%.



Showing increase in percentage of caries-free and almost caries-free children, 1929 to 1947.

The percentage of teeth present in the children's mouths at the time of the 1947 survey differed only slightly from the percentages found at the earlier inspections. The respective figures for 1943, 1945, and 1947 were 92.2, 94.4, and 93.9%.

Detailed Results, 1943–7*

Structure.—Table II, which compares the results of the three surveys, shows the percentages of teeth included in the different grades of structure and also gives a computation of the extent of defective structure expressed as the average hypoplasia figure (AHF). The AHF is arrived at by allotting a number to each grade of M-hypoplasia (1 for M-Hy$_1$, 2 for M-Hy$_2$, and 3 for M-Hy$_3$) and dividing the total hypoplasia figure so obtained for any group of teeth by the total number of teeth in the group, excluding those showing gross hypoplasia. Thus the greater the number of teeth classed as of good structure (Hy$_0$) or included in the less severe grades of M-hypoplasia, the lower the AHF.

As is seen from the average hypoplasia figures (AHF), there was an improvement in structure in each type of tooth from 1943 to 1945 and from 1945 to 1947. The actual reduction in the AHF in the latest survey as compared with the previous one was greatest in the upper centrals and lower first and second molars, but the percentage reduction was substantial in *all* the lower teeth, as in the upper centrals. The least change in percentage reduction of the AHF in 1947 as compared with 1945 occurred in the upper molars, but these teeth are often covered by a thin film of tartar, and it appears to us possible that their hypoplasia figures may be less reliable than those for other types of teeth.

Turning to the proportion of teeth showing the various grades of structure, it is seen that 47.1% were of good structure (Hy$_0$) in 1947, as compared with 38.0% in 1945 and 30.7% in 1943. The progressive improvement from survey to survey was distributed among all types of teeth except the upper molars, which showed little change in structure in all three surveys. A possible reason for this will be considered in a future paper. In 1947 both the first and second lower molars were much better than in 1945. This was particularly evident in the case of the second molars, whose improvement in this period was approximately 179% (i.e., from 7.5 to 20.9%). As in the previous surveys, the upper teeth of all types were on the average of poorer structure than their counterparts in the lower jaw. The incidence of gross hypoplasia was lower in 1947 than formerly, whether the teeth were considered *en masse* or in individual types.

Caries.—As has been already stated, the amount of caries in the 5-year-old L.C.C. school-children underwent a considerable reduction in 1947 as compared with 1945 and 1943. Table III shows the incidence and extent of caries in each type of tooth and in all types together for the three surveys. Like the structure of the teeth, their condition as regards caries is expressed in two ways—first, as percentages of teeth included in the various grades, and, secondly, as the average caries figure (ACF). For the latter the same principle is adopted as for the AHF. The number 1, 2, or 3 is allotted to each carious tooth according to the severity of the disease, and the total caries figure is divided by the number of teeth in the group concerned. The smaller the ACF the less the degree of caries in the group as a whole. The table indicates that there was improvement at each successive inspection in all types except the lower central incisors,

*The detailed 1929 results do not appear in these tables, as they were not published and the charts were lost early in the war.

TABLE II.—*Comparison of Tooth Structure in 1943, 1945, and 1947*

Type of Tooth	Total No. of Teeth Examined for Structure			Good: Hy$_0$			M-Hy$_1$			M-Hy$_2$			Very Defective M-Hy$_3$			Gross Hy			Hy Unclassified			AHF*		
	1943	1945	1947	1943	1945	1947	1943	1945	1947	1943	1945	1947	1943	1945	1947	1943	1945	1947	1943	1945	1947	1943	1945	1947
				%			%			%			%			%			%			%		
Upper Jaw:																								
Central incisors	3,324	1,262	**2,931**	18·2	25·0	**46·2**	33·9	36·2	**38·6**	34·3	26·1	**13·4**	9·4	6·0	**0·8**	3·9	6·6	**3·0**	0·2	0·2	**0·03**	1·37	1·14	**0·68**
Lateral incisors	3,465	1,341	**3,023**	27·2	38·6	**48·0**	46·9	39·4	**42·6**	19·0	14·3	**8·0**	4·1	2·2	**0·2**	2·5	5·4	**2·7**	0·3	0·1	**0·5**	1·00	0·79	**0·61**
Canines ..	3,707	1,369	**3,119**	32·5	40·8	**45·1**	50·8	45·7	**48·5**	13·2	10·1	**4·2**	1·5	1·1	**0·2**	1·0	1·1	**0·7**	1·0	1·2	**1·1**	0·83	0·71	**0·59**
1st molars ..	3,268	1,282	**2,869**	8·2	8·7	**8·9**	32·1	39·2	**55·8**	49·9	42·9	**33·5**	7·0	6·4	**1·4**	2·8	2·8	**0·4**	0·0	0·0	**0·03**	1·57	1·48	**1·28**
2nd molars ..	3,427	1,342	**2,980**	6·0	5·2	**5·2**	29·2	39·5	**48·6**	54·0	45·7	**43·2**	9·4	8·6	**2·9**	1·3	1·0	**0·1**	0·1	0·0	**0·0**	1·68	1·58	**1·44**
Lower Jaw:																								
Central incisors	3,091	1,097	**2,535**	71·7	85·1	**94·3**	24·2	14·0	**5·3**	3·2	0·4	**0·2**	0·6	0·0	**0·1**	0·2	0·5	**0·2**	0·03	0·0	**0·0**	0·33	0·15	**0·06**
Lateral incisors	3,624	1,348	**3,097**	61·5	79·5	**89·9**	33·7	19·2	**9·5**	4·2	0·8	**0·4**	0·4	0·0	**0·1**	0·1	0·3	**0·2**	0·1	0·1	**0·03**	0·43	0·21	**0·10**
Canines ..	3,702	1,370	**3,109**	51·9	69·7	**79·1**	36·9	23·5	**17·2**	5·9	2·3	**0·6**	0·5	0·1	**0·1**	1·4	0·7	**0·3**	3·4	3·8	**2·7**	0·53	0·30	**0·19**
1st molars ..	3,119	1,235	**2,700**	18·4	22·3	**34·9**	38·5	39·6	**52·9**	36·5	32·5	**11·3**	4·0	3·1	**0·5**	2·5	2·6	**0·3**	0·1	0·0	**0·1**	1·27	1·17	**0·77**
2nd molars ..	3,104	1,241	**2,755**	7·5	7·5	**20·9**	34·1	37·5	**50·9**	48·6	45·4	**21·0**	6·3	8·1	**0·9**	3·4	1·5	**0·3**	0·1	0·0	**0·0**	1·56	1·55	**1·02**
Totals ..	33,831	12,887	**29,098**	30·7	38·0	**47·1**	36·3	33·6	**37·4**	26·3	22·0	**13·5**	4·2	3·5	**0·7**	1·9	2·3	**0·8**	0·6	0·6	**0·05**	1·04	0·91	**0·67**

*AHF (average hypoplasia figure) = $\frac{\text{Total hypoplasia figure}}{\text{Total No. of teeth examined for structure (excluding those with gross or unclassified hypoplasia)}}$

TABLE III.—*Comparison of Caries Incidence and Extent in 1943, 1945, and 1947*

Type of Tooth	Total No. of Teeth			C_0			C_1			C_2			C_3			Total Carious Teeth			ACF*		
	1943	1945	1947	1943	1945	1947	1943	1945	1947	1943	1945	1947	1943	1945	1947	1943	1945	1947	1943	1945	1947
				%			%			%			%			%			%		
Upper Jaw:																					
Central incisors ..	3,392	1,280	**2,974**	62·4	70·5	**77·8**	9·8	5·0	**5·6**	16·2	17·2	**13·6**	11·6	7·3	**2·9**	37·6	29·5	**22·2**	0·77	0·61	**0·42**
Lateral incisors ..	3,590	1,358	**3,095**	79·7	85·1	**89·4**	6·8	3·2	**3·3**	9·2	8·6	**5·1**	4·3	3·1	**2·2**	20·3	14·9	**10·6**	0·38	0·30	**0·20**
Canines	3,740	1,381	**3,180**	90·5	92·5	**93·1**	2·9	1·7	**1·9**	4·6	4·2	**4·2**	2·0	1·6	**0·9**	9·5	7·5	**6·9**	0·18	0·15	**0·13**
1st molars	3,740	1,382	**3,180**	58·0	61·1	**69·4**	8·7	8·3	**6·5**	13·3	17·4	**14·3**	20·0	13·2	**9·9**	42·0	38·9	**30·6**	0·95	0·83	**0·65**
2nd molars	3,740	1,382	**3,180**	43·5	48·6	**65·6**	17·2	17·7	**14·0**	18·1	23·6	**11·7**	21·1	10·1	**8·7**	56·5	51·4	**34·4**	1·17	0·95	**0·64**
Lower Jaw:																					
Central incisors ..	3,112	1,098	**2,576**	95·1	98·3	**98·3**	2·7	0·9	**0·7**	1·5	0·8	**0·6**	0·7	0·0	**0·3**	4·9	1·7	**1·7**	0·08	0·03	**0·03**
Lateral incisors ..	3,662	1,354	**3,114**	96·3	97·9	**98·3**	2·0	0·6	**0·5**	1·3	1·3	**0·9**	0·4	0·2	**0·2**	3·7	2·1	**1·7**	0·06	0·04	**0·03**
Canines	3,740	1,382	**3,180**	93·1	94·1	**95·9**	2·4	0·7	**1·4**	3·3	4·3	**2·3**	1·2	0·9	**0·4**	6·9	5·9	**4·1**	0·13	0·12	**0·07**
1st molars	3,740	1,382	**3,180**	46·0	51·4	**56·7**	7·9	7·2	**5·7**	17·0	21·1	**18·8**	29·1	20·3	**18·8**	54·0	48·6	**43·3**	1·29	1·10	**1·00**
2nd molars	3,740	1,382	**3,180**	39·0	41·2	**57·0**	12·9	15·1	**11·2**	15·0	19·5	**11·9**	33·1	24·1	**19·8**	61·0	58·8	**43·0**	1·42	1·27	**0·95**
Totals	36,196	13,381	**30,839**	69·9	73·5	**79·7**	7·4	6·2	**5·2**	10·1	12·0	**8·5**	12·6	8·3	**6·6**	30·1	26·5	**20·3**	0·65	0·55	**0·42**

*ACF (average caries figure) = $\frac{\text{Total caries figure}}{\text{Total No. of teeth (including extractions)}}$

TABLE IV.—*Percentage Incidence of Caries in Teeth with Varying Grades of Structure*

Grade of Structure	Incisors						Canines						Molars					
	Total No. Examined			% Carious			Total No. Examined			% Carious			Total No. Examined			% Carious		
	1943	1945	1947	1943	1945	1947	1943	1945	1947	1943	1945	1947	1943	1945	1947	1943	1945	1947
Hy_0	5,992	2,837	**7,921**	1·1	1·2	**2·4**	3,126	1,514	**3,866**	1·5	1·1	**1·8**	1,281	550	**1,927**	8·3	7·0	**11·9**
$M\text{-}Hy_1$	4,724	1,399	**2,789**	12·0	11·2	**16·7**	3,248	947	**2,050**	7·9	8·0	**9·2**	4,310	1,987	**6,033**	24·5	25·0	**30·7**
$M\text{-}Hy_2$	2,053	536	**649**	44·9	39·2	**36·8**	707	169	**152**	26·7	29·6	**15·1**	6,133	2,127	**3,124**	62·6	66·5	**43·4**
$M\text{-}Hy_3$	487	105	**33**	80·4	81·0	**51·5**	75	16	**10**	61·1	68·9	**0·0**	867	335	**164**	87·1	92·3	**60·4**
Gross Hy	226	165	**178**	64·2	62·4	**36·0**	90	24	**32**	23·3	20·8	**34·4**	319	101	**32**	58·9	52·5	**34·4**

NOTE.—This table does not include the few teeth shown under the heading "Hy Unclassified" in Table II.

where both incidence and extent of caries remained the same in 1947 and 1945. Here so few teeth were carious even in 1943 that little improvement could be expected. The proportion of caries-free teeth of all types increased from 69.9% in 1943 to 73.5% in 1945 and 79.7% in 1947. In the latest survey the most striking increase in this respect was in the upper and lower second molars, where there was most scope for improvement. It is of interest to note that although in 1947 over 70% of the *children* examined had at least some caries, yet the disease occurred in only about 20% of the *teeth*, including fillings and extractions. The proportion of carious teeth had diminished by approximately 33% since 1943.

Relation between Structure and Caries.—All previous surveys using M-hypoplasia standards for structure showed that the better-formed teeth were less liable to decay. This was also true of the 1947 survey, as can be seen by reference to Table IV. For example, the incisors with no hypoplasia had a caries incidence of 2.4%, whereas those with grades $M\text{-}Hy_1$ and $M\text{-}Hy_2$ had a caries incidence of 16.7 and 36.8%, respectively. Of the very few incisors in the $M\text{-}Hy_3$ grade 51.5% were carious. The corresponding figures for molars with no hypoplasia and with $M\text{-}HY_1$ and $M\text{-}Hy_2$ were 11.9%, 30.7%, and 43.4%. As in the case of the incisors, there were relatively few molars in the $M\text{-}Hy_3$ grade, but 60.4% of them were carious.

Other Conditions.—There was less arrest or "spontaneous healing" of decay in individual teeth in 1947 than in 1945, though more than in 1943 (see Table V). The reason for this is not clear. The amount of treatment of carious teeth (see Table VI), which was lower in 1945 than in 1943, had risen in 1947 nearly to the 1943 level, and the percentage of extractions was almost identical in these two surveys.

Reference has previously been made (Pickerill, 1923; Ayers, 1939; Pincus, 1941; Pederson, 1946; Mellanby and Coumoulos, 1946) to the superficial stains commonly seen on children's deciduous teeth, and to the fact that mouths in which black and dark-brown stains occur appear to be associated with a lower incidence of caries, and green stains with a higher incidence. In the 1947 survey this was again the case (see Table VII).

TABLE V.—*Teeth showing Arrest ("Spontaneous Healing") of the Carious Process*

	No. of Carious Teeth Present	% Carious Teeth Present Showing Arrest
1943	9,182	11·7
1945	3,203	21·5
1947	**5,270**	**14·2**

TABLE VI.—*Carious Teeth Extracted, Treated by Silver Nitrate, or Filled*

	Total No. of Carious Teeth (Including Extractions)	Treatment			Total Percentage of Carious Teeth Treated
		% Extracted	% Silver Nitrate	% Filled	
1943 ..	10,886	15·7	6·7	2·7	25·0
1945 ..	3,545	9·6	2·8	2·4	14·8
1947 ..	**6,245**	**15·6**	**2·4**	**4·4**	**22·4**

Discussion

An account has been given of a further survey, made in 1947, of the dental condition of 5-year-old children attending London County Council schools. Comparison has been made between the results of this work and those obtained in the examination of children of the same age group attending the same or neighbouring schools in 1929, 1943, and 1945. The main findings as regards the incidence of

TABLE VII.—*Percentage Incidence of Carious Teeth in Children with and without Superficial Staining of Teeth*

	Percentage of Carious Teeth			ACF		
	1943	1945	1947	1943	1945	1947
Children having:						
(*a*) No stain	30·1	23·1	**19·8**	0·66	0·48	**0·41**
(*b*) Black and dark-brown stains	19·3	15·4	**12·4**	0·41	0·30	**0·25**
(*c*) Green stain	33·4	33·0	**26·0**	0·72	0·69	**0·54**

caries *per child*, observed over this period of 18 years, are set out in Table I and the Graph. It will be seen that the improvement has been great, especially between 1945 and 1947. In the first period of 14 years the average increase in the percentage of caries-free or nearly caries-free children was at the rate of 1.4% per year; in the second period of approximately two years it was 1.95%; and in the third period, also of about two years, it was 4.7%. Tables II and III indicate that the structure of the teeth also has greatly improved from 1943 to 1947 and that the incidence and extent of caries *per tooth* have been substantially reduced.

These surveys were preceded by experimental investigations on animals, begun in 1917, and by controlled studies on children which were the natural outcome of the animal work. The earlier experiments were devoted to a study of the food factors which affected the structure of the teeth, and ultimately it became possible to state the chief dietetic conditions favouring good and poor structure. For the former it was essential that the diet during the period of tooth development should be rich in available calcium and phosphorus and in vitamins D and A. Indeed, it was this work, in association with the researches of E. Mellanby on the subject of rickets, which first helped to prove the existence of a calcifying vitamin (vitamin D). The factors resulting in defective structure were mainly associated with both the quantity and the type of cereals consumed when vitamin D and calcium were deficient in the diet.

The clinical investigations on children showed the importance of the animal experiments in demonstrating the factors controlling dental structure; for these human studies pointed to the conclusion that, other things being equal, well-calcified teeth, according to the criteria used, were less liable to caries than badly calcified teeth.

Another fact of importance made clear by the animal experiments was that those diets which produced teeth of good and poor structure, respectively, also increased or decreased the resistance of teeth to a stimulus such as attrition, quite apart from their original structure. Thus teeth of either good or poor structure, when worn by friction, produced well-formed secondary dentine when the diet was of a highly calcifying nature, but produced badly calcified secondary dentine or none when the diet was deficient in calcifying properties.

Examination of children's teeth which had been subject to attrition indicated the same kind of reaction to this stimulus. A matter of greater importance, however, as was shown by investigations in Sheffield and Birmingham, was that a diet of high calcifying properties given after eruption of the teeth, whatever their structure, could prevent or retard the onset of caries, or, if the disease had already developed, bring about the deposition of well-calcified secondary dentine and ultimately the arrest of the carious process (Mellanby, 1934).

This effect of the post-eruptive diet in altering the resistance of teeth to caries, as opposed to the control of their development and structure by the diet before eruption, was substantiated by surveys made in 1945 on three groups of 5-year-old children, one group attending private schools, another attending London County Council schools, and the third comprising mainly destitute or illegitimate children living from an early age in public institutions and in most cases attending the institutional schools (Coumoulos and Mellanby, 1947). As a group, the institutional children had worse-formed teeth than the L.C.C. or private-school children, but nevertheless had relatively less caries. On the basis of previous experimental and clinical evidence and of the conditions under which the children were reared it seemed fair to postulate that the pre-eruptive diets of the private school children were better in calcifying properties than those of the children who became the responsibility of the institutions, and thus their teeth were of better structure; but on the other hand it appeared that the post-eruptive diets of the institutional children, who received regularly a diet rich in calcifying properties which included cod-liver oil, were on the average better in this respect than those of the private-school group, so that, in spite of the poorer structure, the teeth became more resistant to invasion and allowed less caries to develop.

Thus all these studies emphasize the importance of feeding children, first via the mother and later independently, on diets which will result in better calcification and greater resistance of the teeth.

It might be asked, then, whether there is evidence that the rapid improvement in the dental condition of the London County Council school-children, as regards both structure and freedom from caries, between the years 1943 and 1947, and especially between 1945 and 1947, as compared with the period 1929 to 1943, is due to causes indicated by the earlier experimental and clinical investigations. Certainly on the basis of that work such improvement would be expected to result from the series of changes in the dietary of this country during the war years. It was well known to those familiar with the subject that one of the main defects of the pre-war British dietary was its poor calcifying qualities.

Early in the hostilities, when restrictions in both quantity and quality of food necessitated the best possible use of available supplies, one of the first steps taken by the Government, on the advice of nutritional scientists, was to direct foods with high calcifying properties to those classes needing them most—namely, expectant and nursing mothers and infants. For example, from July, 1940, all expectant mothers could claim a milk priority of 1 pint (568 ml.) a day. After the child was born two pints (1.14 litres) a day were allotted between mother and child for the first year, so that if the mother fed the baby herself then the two pints were available for her own consumption. From the age of 1 to 5 years the child's own allocation was 1 pint a day. This was reduced to half a pint (284 ml.) for home consumption when school age was reached, but could be supplemented by 1/3 or 2/3 pint (190 or 380 ml.) daily at school. In December, 1941, cod-liver oil was made available at a reduced rate through welfare centres, clinics, and food offices to children aged 6 months to 2 years, and in February, 1942, provision was extended to all children up to the age of 5 years. Expectant mothers were eligible for the oil from these official sources from December, 1942; and in April, 1943, vitamin A and D tablets were instituted as an alternative. At this time the vitamin D content of the Ministry of Health's cod-liver oil compound was raised from 100 to 200 international units per gramme, and has remained at this level. More eggs have also been available to mothers and young children than to non-priority classes.

Besides these special allocations there have also been, during and since the war years, a series of nutritional changes which have affected the whole population of the country, including, of course, the mothers and growing children. In this case also the calcifying as well as certain other qualities of the diet have been improved. For instance, since 1940 all margarine has had to contain vitamins D and A. In July, 1940, the vitamin D content was at the rate of 30 international units per ounce (approx. 1 i.u. per gramme); in November, 1941, it was raised to 60 i.u. (2 i.u. per gramme) and in January, 1945, to 90 i.u. per ounce (3 i.u. per gramme); the vitamin A content has been from 450–550 i.u. per ounce (16–20 i.u. per gramme) throughout this period. With a weekly ration of 3 to 4 oz. (85–113 g.) of margarine for the average person,

it has been possible for each to receive between 12 and 50 i.u. of vitamin D and 200 to 300 i.u. of vitamin A per day from this source alone. Again, from 1942 onwards calcium has been added to all flour ; at first the rate was 7 oz. (200 g.) of calcium carbonate per sack of 280 lb. (127 kg.) ; later in 1946 the amount was doubled. This addition of calcium was necessary because the raising of the extraction rate of the flour from the pre-war level of 70–73% to the wartime level of 85%, or even higher, greatly increased the phytate content of the flour, and phytate is known to decrease the availability of calcium in the food. This additional calcium was also an important adjunct to the dietary of non-priority people because of the limited amounts of milk, eggs, and cheese available. The larger amount of added calcium was sufficient to neutralize the harmful anticalcifying properties of the phytate, and any excess was available to help in promoting or maintaining the calcification of bones and teeth and for other physiological functions which required optimal calcium supplies.

Prior to the war many mothers had neither the desire nor the means to procure for themselves or their children adequate supplies of such foods as milk, eggs, and cod-liver oil. Recently, however, there has been an increasing awareness, on the part of both the medical and the lay population, of the nutritional benefits conferred by these foods ; and, generally speaking, money has not been a limiting factor, since Government subsidies have brought them within the reach of most families. If, however, people cannot afford to buy milk even at the subsidized rate, it may be obtained free of charge for expectant mothers and children under 5 years of age ; and cod-liver oil, which was previously supplied at reduced rates, can to-day be had without cost under the welfare service.

It appears, then, from the foregoing account of recent diet changes, that an important reason for the more rapid improvement in the dental condition of children between 1945 and 1947 as compared with the preceding years is clear-cut. For the first time in the course of these surveys all the expectant and nursing mothers and all the children up to the age of 5 years have been in a position to obtain increased quantities of calcium and vitamin D via established milk, cod-liver oil, and egg priorities, and they have benefited further by other Government measures outlined above ; so that throughout the whole antenatal and post-natal life of the latest group of children examined, who were born between November, 1941, and October, 1942, the diet available has been of consistently better calcifying qualities than that of the subjects of the earlier surveys. The pre-eruptive diet has produced better-calcified teeth than were formerly observed, and the post-eruptive diet has tended still further to increase the already higher resistance of these teeth to caries.

It must not be forgotten, however, that even to-day the majority of children in the young age group studied have some carious teeth, and it seems most likely, on the basis of the present hypothesis, that this is due, in part at least, to the fact that many mothers do not avail themselves of all the special foods at their disposal. In order, therefore, to get some idea of what proportion of the mothers whose children were examined in 1947 actually took up their special allowances, a point was made of asking any who were present at the examination some simple questions on the subject. The numbers involved are too small to be of significance, but they give an indication of the general trend.

Of the 224 women questioned, 68% stated that they drank their priority milk, and 65% of the children were said to have consumed a pint of milk a day during the pre-school period. In answer to the question, " At what age did you begin to give this child cod-liver oil ? " 30% of the mothers said that it was given from the age of 8 weeks or less, but the amount and the length of time for which it was given varied. It was estimated that about 14% of the children had not had any cod-liver oil or alternative vitamin concentrate at any time, while the remaining 56% had had one or other of these supplements for some period during the first five years of life.

These figures suggest that there is still need for greatly increasing the numbers of women and children making use of the food priorities mentioned. This, of course, does not mean that the problem of caries would thus be solved. Indeed, it probably cannot be solved while the actual factors directly initiating the condition remain obscure, but when these are brought to light it may be possible to control the disease more directly and efficiently. Meanwhile the evidence grows stronger from year to year that the best way at present available to make a primary attack on this great health evil is to feed pregnant and nursing women, infants, and children along the lines which are known to produce well-constructed teeth and jaws and to increase resistance to decay—in other words, to ensure that both pre-eruptive and post-eruptive diets are relatively rich and balanced in available calcium and phosphorus and in vitamin D.

Summary

The dental condition of 5-year-old children attending London County Council schools in 1947 has been described and compared with that of similar groups examined in 1929, 1943, and 1945.

The progressive improvement found in the two previous surveys has also been observed in 1947. The rate of increase in the percentage of caries-free or almost caries-free children between 1945 and 1947 has been more rapid than between 1943 and 1945, and certainly much more rapid than between 1929 and 1943. The same trend has occurred between 1943 and 1947 in the structure of the individual teeth and the incidence and extent of caries, the improvement being greater in the second two years than in the first two.

As in the 1943 and 1945 surveys, it is again suggested that the improvement is due to the increased calcifying properties of the dietary of this country, and particularly that of pregnant and nursing women, infants, and young children. The marked improvement in 1947 is thought to be mainly due to the fact that for the first time in these surveys the diet has been of consistently better calcifying qualities over the whole antenatal and post-natal life of the children concerned.

We wish to express our thanks to the London County Council and Sir Allen Daley for permission to undertake this survey; to the head teachers of the schools and their staffs for their willing co-operation; to Mrs. M. Kelley, Miss I. Allen, and Miss J. Robinson for their help in the preparation of this report; and to the Medical Research Council for financing the work.

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(For fuller references to related work see Mellanby, M., and Coumoulos, H., 1944 and 1946.)

New regulations made by the Minister of Health about health visitors and tuberculosis visitors apply not only to those employed by local authorities, as formerly, but also to the employees of voluntary organizations. They also cover part-time visitors as well as whole-time.

STURGE-KALISCHER-WEBER SYNDROME OF BILATERAL DISTRIBUTION

BY

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Congenital naevi of the face (and body) may be associated with corresponding lesions of the leptomeninges, the latter giving rise to epilepsy—often Jacksonian in type—and in some cases hemiparesis. Sturge, in 1879, reported the case of a girl, aged 6½ years, with an extensive telangiectatic naevus, especially of the right side of the face and head, right-sided buphthalmos, and epileptic attacks starting in the left hand; he concluded that the right side of the brain was also involved in the naevoid condition. Schirmer, in 1860, had already described the case of a man aged 36 with an extensive naevus, especially of the left side of the face, and left-sided buphthalmos, but he made no reference to epileptic attacks or a possible cerebral lesion.

Kalischer, in 1897, reported a case described as a diffuse evidently congenital telangiectasis of the scalp and brain, and in subsequent post-mortem study (Kalischer, 1901) the lesion is described as a blood-vessel tumour (angioma) of telangiectatic character with progressive alteration and participation of veins and capillaries in the growing lesion.

Parkes Weber, in 1922, reported the radiographic appearances of the brain in a typical case which showed a large telangiectatic naevus involving especially the left side of the face, right-sided hemiparesis, and hypotrophy of the affected limbs. *X*-ray examination of the skull revealed a more or less calcified and apparently "festooned" lesion on the surface of the left cerebral hemisphere. A year later Dimitri (1923), in the Argentine, described the radiographic findings in a similar case.

Other cases in which facial naevi—with or without similar lesions on other parts of the body—have been associated with proved leptomeningeal angiomata, or with symptoms such as epilepsy suggesting the presence of a similar cerebral lesion, have been reported by several observers. The condition may also be associated with buphthalmos ("ox-eye," congenital glaucoma) on the same side as the main cutaneous naevus, as in Parkes Weber's case (1922), three of Cushing's cases (1906 and 1928), and two of Brushfield and Wyatt's cases (1927). Mental deficiency may also be present, as in all Brushfield and Wyatt's cases (1927) and one of Cushing's (1928).

Unilateral intracranial haemorrhage from the abnormal blood vessels of the meningeal angiomatous condition may also occur in early life (or even intrauterine life) and may cause or increase the spastic hemiplegia. The history in one of Cushing's cases suggests this possibility, and in one of Brushfield and Wyatt's cases the left hemiplegia was first noticed after a severe left-sided convulsive attack at the age of 6 weeks.

The actual cerebral lesion would appear to be a capillary angioma of the leptomeninges, as judged from the few post-mortem examinations it has been possible to carry out—e.g., the cases of Kalischer (1901), Strominger (1905), Cushing (1906, 1928), and Brushfield and Wyatt (1927). Thus the meninges are described as "unduly vascular and in all probability representing a naevoid condition similar to that of the skin" (Cushing's first case); the cerebral meninges thickened and excessively vascular (Strominger's case); left cerebral hemisphere covered by a diffuse meningeal angioma (Brushfield and Wyatt). A very vascular condition of the dura mater with adhesions to the leptomeninges has been found at operation (Cushing). The affected cerebral hemisphere is sometimes smaller than that of the opposite side (e.g., Kalischer's case and one of Cushing's cases).

Parkes Weber (1946) concludes that the condition is due not to any genetic cause but to an "accidental local injury (mechanical, chemical, or physical) to the ovum at some period after fertilization—that is to say, to the embryo during early intrauterine life."

Should an extensive naevus involving mainly one side of the face be present in a patient with contralateral Jacksonian epilepsy or a hemiparesis, the presence of a pial angioma, even if not revealed by calcification, is sufficient to justify the diagnosis. All the cases hitherto recorded appear to have been unilateral. Oppenheim, however, in 1913 reported four cases, in two of which the apparently involved cerebral hemisphere was contralateral to the facial naevus.

The following case showed extensive cutaneous naevi on both sides of the face and body, although more extensive on the right side, which was also hemiparetic. *X*-ray examination of the skull showed evidence of bilateral intracranial calcification. The epileptic attacks were generalized, although clonic movements usually began and were more pronounced on the right side of the body; also, the child was mentally deficient (amentia).

Case Report

The patient, a female child, was first seen in December, 1942, at the age of 7½ months. She was a first child, full-term, both the pregnancy and the birth (vertex) being normal; weight at birth, 6 lb. 7 oz. (2.92 kg.) Convulsive attacks started at the age of 4 months and have continued at intervals; the fits were mainly but not exclusively right-sided. She has had as many as five fits in one day and has seldom been free from attacks for longer than two or three days. On phenobarbitone, ¼ gr. (16 mg.) t.d.s., the attacks are somewhat reduced in frequency.

The family history showed that a cousin on her mother's side had a cutaneous naevus on the left side of the forehead but without fits. The father and mother were in good health and there had been no miscarriages. There was no consanguinity of the parents and the mother's blood Wassermann reaction was negative.

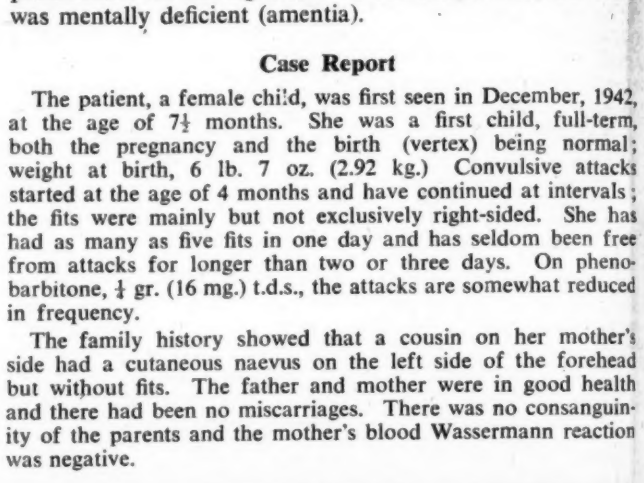

FIG. 1.—The patient at the age of 3½ years, showing extensive cutaneous naevi of left side of face and chest and left arm, with less pronounced naevus formation on right side of face.

FIG. 2.—The patient at the age of 4½ years, showing the cutaneous naevus of the upper part of the back on the left side, both buttocks—mainly the left—and the left leg.

On examination (December, 1942), extensive and bright-red capillary naevi were present on the left side of the face, scalp, and upper portion of the trunk; the left arm and hand and the outer portions of the left leg were also involved. On the right side of the face and scalp similar but less extensive naevi were present; on neither side of the face did the lesions extend below the level of the mouth. Further, on the right side smaller naevoid patches were seen on the posterior aspect of the shoulder, scapula, gluteal region, and calf, and on the outer side of both dorsum and sole of the foot (Figs. 1 and 2, taken later). Her weight was 14 lb. 6 oz. (6.52 kg.) and she appeared to be mentally deficient. The cranial nerves and optic disks were normal. There was slight spasticity of the right arm and leg, with increased deep reflexes on the right side, but she moved the limbs fairly well. Heart and lungs were normal.

The cerebrospinal fluid was clear to the naked eye but showed 240 red cells, with 6 white cells per c.mm., mainly small lymphocytes but with an occasional small endothelial cell; total protein, 140 mg. per 100 ml., with globulin in slight excess. Lange 1211110000 and W.R. negative. Blood W.R. negative. *X*-ray examination of the skull at this stage showed no abnormality.

The fits observed in hospital started with twitching of the right side of the face—at the angle of the mouth and around the eye—and deviation of eyes to the right, the clonic movements spreading to the right arm and leg; there was loss of consciousness with spread of the twitching to the left arm and leg.

Subsequent Progress

The patient was seen again a year later (December, 1943), aged 1 year and 7 months. Epileptiform attacks had continued at intervals, usually beginning with twitching of the right side of the face, arm, and leg as before; occasionally, however, the attack would start with twitching of the left arm. On whichever side the attack started, however, both sides were eventually involved, but the right side usually more than the left. The child appeared unconscious for only a minute or so, and sometimes consciousness was not lost. The anterior fontanelle was closed. *X*-ray examination of the skull now showed extensive fine calcification on the left side of the cerebrum and also similar calcification but of lesser extent on the right side.

At the age of 3½ years she could sit up unsupported but was unable to stand. She made no attempt to speak, but at times uttered a monotonous cry. She followed a lighted electric torch with her eyes and turned her head at a sound. The cerebrospinal fluid now showed only two small lymphocytes per c.mm. and a total protein of 40 mg. per 100 ml.; both W.R. and Lange reactions were negative. A blood examination was

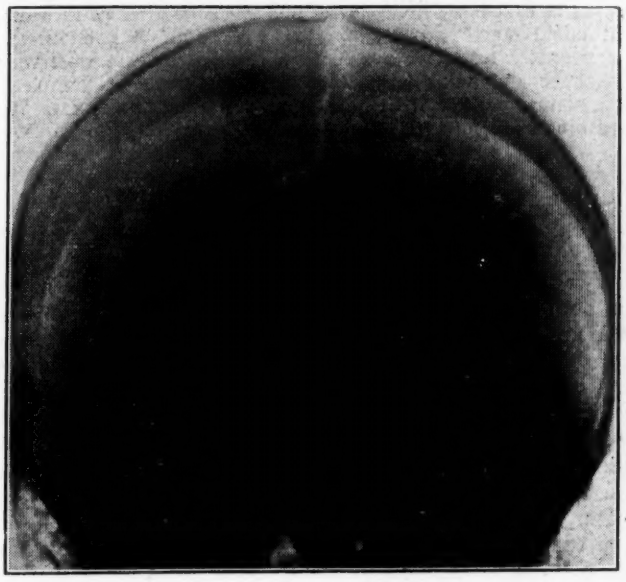

FIG. 3.—Skiagram of skull (antero-posterior view) showing bilateral intracranial calcification, more pronounced on the left side. (Patient at the age of 3½ years.)

normal, with 5,040,000 red corpuscles; Hb, 92%; colour index, 0.8; and white cells normal.

An *x*-ray examination of the skull again showed bilateral intracranial calcification, but more pronounced on the left side than the right. In the antero-posterior view (Fig. 3) the calcification is seen in fine linear markings radiating outwards towards the periphery. In the lateral view calcification extends from the cribriform plate to the occipital region, being more pronounced in the fronto-parietal areas (Fig. 4).

When seen at the age of 4½ years (January, 1947) she had remained free from fits for several months at a time. When they occurred she might have any number from 1 or 2 to 12 in one day. They remained more or less of the same type, mainly right-sided but spreading to the left side, and sometimes vomiting occurred.

On examination speech was still absent and she made only unintelligible noises. The right arm was spastic, held flexed at the elbow, wrist and fingers, but showed a fair degree of voluntary movement. The right arm jerks were all brisker than those on the left. The left arm was used more than the right. The abdominal reflexes were present, left brisker than right. There was slight adductor spasm of the legs, the right leg being more spastic than the left. Voluntary movements were present but were weaker and of less range in the right leg, which was ¾ in. (1.9 cm.) shorter than the left. There was a tendency to

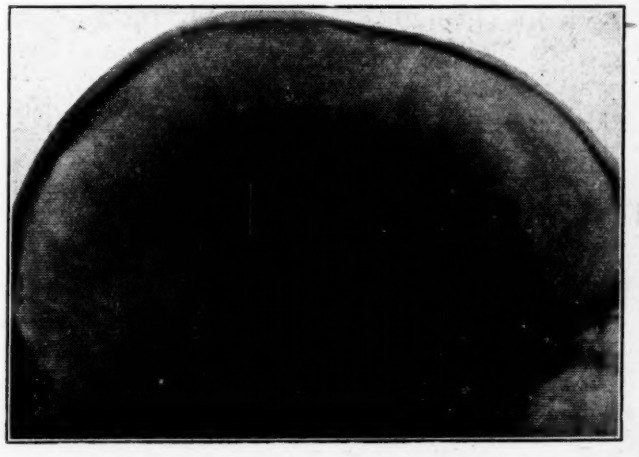

FIG. 4.—Skiagram of skull (lateral view), showing intracranial calcification extending from the supra-occipital to the frontal region. (Patient at the age of 3½ years.)

talipes calcaneus on both sides. She made no attempt to walk, but could stand when supported with both legs adducted. Occasionally restless movements of all limbs were observed. The knee and ankle jerks were brisk, right greater than left, and plantar reflexes indefinite. Heart normal, pulse rate 76, and blood pressure 105/70.

Commentary

I am not aware of any previous record of a case of Sturge–Kalischer–Weber syndrome showing bilateral intracranial calcification. Cases of extensive cutaneous naevi on both sides of the body, usually more continuous on one side and patchy on the other, in association with Jacksonian epilepsy are occasionally encountered. One such case under my care is described in an addendum to Parkes Weber's paper of 1929; in this case no intracranial calcification was demonstrable on *x*-ray examination. In the case now reported the calcification is more extensive and more intense on the one side (left cerebral hemisphere) than on the other, and this corresponds to definite hemiplegic signs in the spasticity of the right arm and leg and the increased deep reflexes. Similarly, the epileptiform attacks usually begin on this (right) side, and even when more generalized the right side is the more affected. The blood found in the cerebrospinal fluid at the first lumbar puncture at the age of 7½ months was almost certainly due to contamination at the time of lumbar puncture (no doubt resulting from intense local vascularity) rather than to a recent subarachnoid haemorrhage from the intracranial angioma, as the red cells were quite fresh and there was neither haemolysis nor xanthochromia. Then again, the cerebrospinal fluid examined at the age of 3½ years was quite normal.

The calcification of the meningeal angioma evidently began between the ages of 7½ months and 1½ years, since no *x*-ray abnormality was seen at the earlier age, but a year later intracranial calcification was demonstrated on both sides, the more profound lesion of the left cerebral hemisphere showing the more extensive and denser calcification.

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Presiding at a conference of the Tuberculosis Association in Belfast, Dr. Frederick Heaf, Director of the London County Council tuberculosis services, said the organization in Ulster for dealing with the disease was the envy of the profession in England. Dr. Brice Clarke, Director of the Northern Ireland Tuberculosis Authority, informed the conference that there were 1,200 beds in tuberculosis hospitals in Ulster, as well as a number of beds in general hospitals for tuberculosis patients. Seven hundred additional beds were planned and 250 of them would be ready within the next twelve or eighteen months. A children's orthopaedic hospital was being built and an infants' and children's hospital for pulmonary cases was being developed. It was hoped to have five or six clinics in Belfast and thirteen in other parts of Ulster. In addition, a contract had been placed for 100 rest chalets. Since June, 1945, 93,000 persons had been examined by the mass radiography unit in Belfast and a second unit had been ordered.

POLIO-ENCEPHALITIS

BY

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AND

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The 1947 epidemic of poliomyelitis has again attracted attention to the question of polio-encephalitis, and there is no doubt that considerable confusion prevails concerning the definition of this condition. McAlpine (1947) stated that "during this epidemic the presence of nystagmus, photophobia, and neck rigidity in a patient who has been ill for a few days with headache and fever was considered sufficient evidence for the diagnosis of polio-encephalitis." Murray (1947) suggested that the brain-stem form of the disease should be regarded as an extension of the spinal type, and that the notification of polio-encephalitis as a separate condition should be discontinued.

Rothman (1931), in an excellent review of the situation at that time, stated that "the exact status of polio-encephalitis (using the term to mean cerebral and not bulbar involvement) and its relationship to the spinal form of infantile paralysis remains nearly as unsettled now as it was at the time of its description." This statement holds true to-day. It is hardly surprising that this should be so when it is remembered that the name was first given by Strümpell in 1885 to a form of cerebral paralysis in children which, although displaying many of the manifestations of poliomyelitis, was probably due to toxic action on the cerebral vessels causing thrombosis or haemorrhage without evidence of encephalitis (Ford and Schaffer, 1927).

It has been stated that increased tendon reflexes, absent abdominal reflexes, and extensor responses are evidence of cerebral involvement in poliomyelitis (Kiss and Fenyes, 1936). These signs, and the combination of spastic and flaccid paralyses, may be due to pressure on the pyramidal tracts from inflammation and oedema in the white matter of the cord.

Scheinker (1947), in a detailed study of six cases, found that no part of the central nervous system entirely escaped damage, and that the medulla, pons, mid-brain, and cerebellum were involved in every case, while the cerebral cortex was not affected at all. He also found that inflammatory changes were intense but neuronal destruction rare in the higher centres, in contradistinction to conditions in the anterior horns. Bodian (1947), reporting on 24 human cases, stated that to the pathologist all cases of poliomyelitis were encephalitic, that some areas of the brain were never affected but the main cerebral changes were from the brain-stem to the hypothalamus and thalamus. So far as the motor cortex was concerned, Bodian considered that only in rare cases were the lesions severe enough to cause clinical signs, and that spastic and psychic sequelae were not cortical in origin—nor were stupor, disorientation, and coma—but were produced by areas of focal softening in the basal centres.

The following case under our care appeared to show encephalitic manifestations and involvement of lower motor neurones.

Case Report

A girl aged 17½ had been well until Nov. 9, 1947, when she suddenly developed a cold and generalized headache. On Nov. 12 vomiting started, being repeated several times, and she was admitted to hospital as a case of suspected meningococcal meningitis.

Previous history revealed that she had had convulsions in infancy dating from birth, but these had gradually diminished in frequency and finally ceased at the age of 8. On admission the temperature was 100° F. (37.8° C.), pulse 104, respirations 20. The patient was extremely ill; she was unconscious, but resisted violently when disturbed. The pupils were very small but equal, and they reacted to light. Cranial nerves were normal. Neck stiffness and Kernig's sign were present. Power and tone in the limbs appeared normal and movement during the delirious phases was full. Tendon and abdominal reflexes were present and equal and the plantar reflexes normal. There was incontinence of urine. The cerebrospinal fluid was clear and under increased pressure, and 20 ml. was removed easily. She was treated with full doses of sulphathiazole and ½ mega unit of penicillin daily (10,000 units intrathecally) pending laboratory report on the fluid. She vomited once later but remained quiet unless disturbed.

Next day the temperature had risen to 100.6° F. (38.1°C.); she was still in coma, was difficult to rouse, and only mumbled unintelligently, and became violent on interference. By 1 p.m. she showed signs of returning to consciousness and reacted to stimuli but still resented interference. Forty minutes later she had a major convulsion which lasted only a short time, and then she became comatose again. At 3.10 p.m. she developed twitching of the right side of the face lasting a few seconds, became cyanosed and then pale, and was still unconscious. This twitching was repeated about one and a half hours later and also at 6.30 p.m., and the state of unconsciousness remained unchanged. By 9.30 p.m. she regained consciousness for a short time, was very restless and complained of frontal headache, but asked for a bedpan and passed urine normally.

The following morning (Nov. 14) the temperature was normal and remained so throughout the remainder of the illness. The cerebration had improved and she could answer questions, but she tired very easily and was not co-operative. The neck stiffness persisted, but Kernig's sign was negative. The left arm was now paralysed and the movements of the right forearm and hand impaired, while the tendon reflexes were absent in both arms and only the left ankle-jerk could be obtained. The abdominal and plantar reflexes were normal.

By this time the reports on the examination of the specimens of cerebrospinal fluid had been received. The specimen of Nov. 12 was sterile, contained 64 cells per c.mm. (87% lymphocytes), 700 mg. chorides, 30 mg. sugar per 100 ml., 30 mg. protein per 100 ml., with no increase in globulin. The specimen of Nov. 13 was also sterile, 162 cells per c.mm. (70% lymphocytes), 740 mg. chlorides per 100 ml.; protein and sugar were unchanged.

The improvement in her condition was maintained; she was rational and co-operative on Nov. 15 and could sit up and move about easily, though she had no recollection of her illness. The power in the arms improved slowly and the tendon reflexes eventually returned, so that she was able to leave hospital on Dec. 8. There was some weakness of the forearms and hands, particularly on the left, due to impaired action of the intrinsic muscles of the thumb and fingers. Incoordination of the left arm and slight intention tremor were present.

She was next seen as an out-patient on Jan. 20, 1948, when she appeared normal mentally and had developed no character changes. She still had considerable disability in using the left hand, particularly for fine movements, although the range was full and the power improved. The tremor of the left hand was coarser than previously, was more pronounced, and could not be controlled voluntarily; past-pointing was still present and the tendon reflexes were more active than on the right. There was no muscular wasting.

Discussion

The inevitable criticism of such a case is that it may have been one of acute encephalitis lethargica. Toomey (1940), in discussing the diagnosis of encephalitis, states that, although theoretically a patient with encephalitis should have an upper motor neurone response, there may be such a degree of neural shock that he may be somnolent or comatose and therefore not very reactive. In such cases, if there are combined upper and lower motor neurone lesions, the latter should be ignored and a diagnosis of encephalitis lethargica made, unless the lower motor lesion is segmental in type, when polio-encephalitis would be probable.

The case reported occurred towards the end of the poliomyelitis epidemic, when encephalitis lethargica was extremely rare. There was no cranial-nerve involvement and the rapid onset of delirium and coma was followed by a flaccid paralysis of the arms which cleared rapidly except for the left hand. An upper motor neurone lesion was suggested by the subsequent residual weakness, tremor, and incoordination, as well as by the initial hyperexcitability and coma, but without any subsequent character changes. The cerebrospinal fluid is of no help in distinguishing the two conditions.

It has been mentioned that the reason why all cases of poliomyelitis do not show symptoms resulting from the cerebral lesions is probably because they are rarely severe or destructive enough, but it is also true that considerable difficulty exists in assessing how far they may alter function. It seems reasonable to suggest that, although the lesions may be distinguished histologically, the symptoms resulting from them may, according to their position, resemble those of any other acute encephalitis. Differential diagnosis would therefore not be possible on clinical grounds alone, unless typical segmental lower motor neurone paralysis was also present.

Summary

It is suggested that a diagnosis of polio-encephalitis should be reserved for the comparatively rare cases of poliomyelitis with cortical or cerebral manifestations.

A case is described which appeared to show such evidence, with early flaccid paralysis of the arms and later spasticity and tremor of the left hand.

The difficulty of diagnosing such a condition from acute encephalitis lethargica is discussed, and the suggestion offered that on clinical grounds alone this may be impossible.

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The report of the British Council for the year 1947–8 has recently been published. It describes the work done to strengthen the bonds of common interest between this country and others in the arts and sciences and in the social and technical problems of the age. The Council has an active medical department which produces the *British Medical Bulletin* for distribution abroad. Two numbers were published during the year: the first, of 118 pages, contained a symposium on problems of personnel research, and the second, of 176 pages, a symposium on lactation. The medical library and information service was considerably expanded during the year, and many more inquiries were received from overseas, particularly about the social services and the new Health Act. A number of distinguished medical men were invited to visit this country as the Council's guests, and assistance was given to foreign delegates attending some of the international medical conferences which were held in this country. Programmes of work were arranged for over forty overseas medical graduates holding Council scholarships. In connexion with colonial students generally the Council's experience is that the early suspicions which these students are apt to harbour soon vanish and are replaced by gratitude and eagerness to co-operate once they know that they are treated as equals, or at least on the basis of their personal capacities and characteristics. Through the welfare service for overseas students of university status assistance was given to a total of 7,600 students.

GYNAECOLOGICAL PSYCHIATRY

A PRELIMINARY REPORT ON AN EXPERIMENTAL CLINIC

BY

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The value of the *ad hoc* psychiatric clinic in the treatment of gynaecological disorder is being slowly accepted even by the most conservative of practitioners, but such clinics have the disadvantage that they tend to take the patient out of the environment to which she has turned for advice and to treat her purely on psychological lines. In order to avoid this segregation it was decided to establish, on an experimental basis, sessions for the psychiatric investigation and treatment of cases referred with gynaecological symptoms. Some of these patients were plainly victims of an anxiety state, with no evident physical cause for their symptoms, but there were others with definite pelvic lesions needing gynaecological investigation and treatment whose symptoms were not entirely compatible with the physical findings.

In the following description of the work of this "clinic within a clinic" we have attempted to summarize the impressions formed during two years' work and to show that there is room for such a clinic within a gynaecological department. We have made no attempt to put forward any original views on the aetiology or treatment of gynaecological ailments, and the opinions expressed under various headings are not intended to have the weight of vast experience or to imply that our beliefs are already fixed concerning these matters. It is hoped that the results of this experiment will stimulate others to offer their experiences for discussion.

The clinic was established to serve a double purpose: (*a*) to assess the degree to which somatic symptoms in particular cases were influenced by psychological factors, and (*b*) to give such short-term psychotherapy as was practicable. Cases referred by the gynaecologist comprised those in which psychoneuroses were obvious and those in which the physical findings were insufficient to account for the patients' symptoms. Personality, heredity, constitution, and life history were studied in each patient and an attempt was made to assess the incidence and relative potency of aetiological factors leading to the development of psychoneurotic disturbances (Table I), and correlate such factors with the somatic symptoms presented (Table II).

TABLE I.—*Incidence of Aetiological Factors in Neurosis of 165 Patients*

	Major Factor		Contributory Factor	
Maladjustment to husband	50	30·3%	6	3·6%
Maladjustment to one or both parents	3	1·8%	42	25·4%
Maladjustment to children	—	—	13	7·8%
Maladjustment to "in-laws"	4	2·4%	27	16·3%
Sexual frustration	29	17·5%	52	31·5%
Fear of pregnancy	33	20%	38	23%
Emotional immaturity	33	20%	17	10·3%
Infertility	6	3·6%	21	12·7%
Inadequate housing	2	1·2%	57	34·5%
Separation from husband	4	2·4%	9	5·4%
Inadequate social outlets	—	—	43	26%
Financial stress	1	0·6%	2	1·2%

Of 165 patients with psychoneuroses of varying degrees of severity, 77 (46%) were considered to possess psychologically unstable constitutions. The majority of these gave a history of family and personal proneness to psychosomatic disorders. As a group they showed less resistance to environmental and emotional stresses than the remaining 54%. They were more disturbed by separation from their husbands, by housing difficulties, and by the general hardship of present-day conditions.

TABLE II.—*Relation of Symptoms to Psychological Stress Factor*

	Maladjustment to Husband	Maladjustment to One or Both Parents	Maladjustment to Children	Maladjustment to "in-laws"	Sexual Frustration	Fear of Pregnancy	Emotional Immaturity	Infertility	Inadequate Housing	Separation from Husband	Inadequate Social Outlets	Financial Stress
Total incidence of each stress factor (see Table I)	56	45	13	31	81	71	50	27	59	13	43	3
Dyspareunia	15	12	0	7	29	18	19	10	21	5	6	0
Frigidity(no orgasm)												
Libido+	18	9	5	5	30	12	7	11	12	3	3	0
Libido−	12	12	0	2	12	10	13	5	6	1	3	0
Non-consummation	2	1	0	2	7	5	9	2	4	0	2	0
Infertility	7	5	0	4	20	0	9	27	7	1	2	0
Dysmenorrhoea	9	9	2	5	21	13	11	4	12	1	4	1
Menorrhagia	4	2	2	3	13	8	4	2	5	2	2	1
Irregular haemorrhage	7	5	0	8	13	10	3	2	7	0	5	1
Amenorrhoea and hypomenorrhoea	3	2	0	2	6	1	2	3	2	0	1	0
Breast pains	1	0	0	0	0	1	0	1	0	0	0	0
Abdominal pain	11	6	3	1	24	11	7	4	14	5	10	0
Backache	3	1	3	4	11	3	4	2	6	1	4	1
Abdominal swelling and discomfort	1	2	0	0	2	3	2	1	0	2	11	0
"Bearing-down" sensations	2	2	1	0	2	2	0	0	2	0	1	0
Vaginal discharge	11	9	1	4	14	10	10	3	7	2	4	0
Pruritus vulvae	0	3	2	1	7	6	0	1	3	1	4	0
Vaginal discomfort	7	0	0	1	6	2	5	3	1	0	11	0
Frequency of micturition	3	1	1	0	3	2	2	0	3	0	3	1
Dysuria	0	1	0	0	2	2	1	1	4	2	2	0
Urinary incontinence	2	1	0	0	2	0	1	0	1	0	2	1

Symptoms and Aetiology

Maladjustment

Faulty Personal Relations.—Maladjustment to the husband was the commonest and most potent dynamic factor in the production of neurosis. (The relation with symptomatology is discussed below.) Inability on the wife's part to adapt herself to marriage was found to be associated with earlier faulty relations with one or both parents. Unconscious hostility to the husband and aversion to marriage often originated in an insecure childhood during which the patient's parents quarrelled or separated and the patient identified herself with her ill-used mother. Depreciation of the husband was sometimes the result of overevaluation of the father. Maladjustment between patients and their children appeared in all instances to be secondary to maladjustment to the husband or to the patient's own mother. Maladjustment to "in-laws" figured as a contributory stress factor in 16.3% of cases. In 2.4%, where such maladjustment was the focus of the neuroses, there was evidence of psychosis in the husband's family, with abnormally hostile behaviour towards the patient.

Maladjustment to the Husband Related to Frigidity and Dyspareunia.—Of 56 patients maladjusted to their husbands, 53% did not experience orgasm and 26.8% complained of dyspareunia. In some cases fear of pregnancy contributed to the motivation of the symptoms, but in the majority the apparent frigidity and dyspareunia suggested the unconscious expression of resentment against the husband. Absence of orgasm appeared to represent their refusal to be reconciled—a physiological sulking—and dyspareunia, where severe enough to curtail coitus, served as a punishment for the husband and, at a deeper level, for the woman herself.

Sexual Frustration and Fear of Pregnancy

Patients were considered to be sexually frustrated who, although their sexual impulses were within normal limits, rarely or never experienced orgasm. In seven of these cases the husband was wholly or partially impotent and in eight cases the husband's coital technique was faulty as a result of ignorance. Absence of orgasm appeared most frequently to be secondary to fear of pregnancy and to maladjustment to the husband.

Fear of pregnancy was observed in 71 cases, which included multiparae, recently married women wishing to postpone pregnancy on account of housing difficulties, and emotionally immature patients resistant to motherhood : 31% of these patients did not experience orgasm and 25% complained of dyspareunia. In none of these cases was a satisfactory contraceptive technique employed. Coitus interruptus was commonly practised. Some used pessaries in which they had little or no faith ; some made no attempt at contraception. In patients who practised coitus interruptus the habit was apparently a contributory mechanical factor to the absence of orgasm, but in all instances a psychological inhibition of orgasm was also demonstrable as an unconscious defence mechanism against pregnancy. Many patients expressed the belief that conception was possible only when orgasm occurred. Dyspareunia similarly represented an unconscious escape from risk of pregnancy

Sexual Frustration and Abdominal Pain

Abdominal pain of one kind or another was a common complaint among all these patients. In some cases it took the form of dysmenorrhoea of "spasmodic" or of "congestive" type ; in others it resembled and may in fact have been aggravated by "middle pain." In a few cases the duration of the pain and its relation to the period suggested endometriosis, especially when there were associated rectal symptoms and dyspareunia, but physical examination did not confirm the impression of endometriosis, and the symptoms later cleared up or changed in character. On several occasions the opportunity arose for direct examination of the pelvic organs by laparotomy, and it was possible to demonstrate the entire absence of the gross features of endometriosis and even to exclude it by histological examination.

The commonest type of abdominal pain encountered, however, was the so-called "pelvic pain," usually on the left side, dragging and aching in character, and occurring at all times in the menstrual cycle, though usually worse before or during the loss. In some of these cases there was tenderness on the left on vaginal examination but no evident gross pathology. Again, occasionally the opportunity has arisen to inspect the pelvic organs at laparotomy, and the absence of any gross organic cause for the symptoms has been demonstrated.

It may be that there is a physical mechanism for the production of pelvic pain in these people, especially where coitus interruptus is regularly practised without the relief of normal sex relations. The old theory of "pelvic congestion" may be invoked to explain the occurrence of pain, assuming that one ovary or tube becomes especially "congested" from repressed sex feeling. Low libido or distaste for sex relations was also a common finding in the same group, and it is not easy to correlate this with the presence of "ovarian congestion," unless one admits that a strong sex urge was present but was so deeply repressed that the woman was unable to recognize any feelings other than revulsion or lack of interest towards physical relations.

Abdominal pain appeared to be one of the most difficult symptoms to eradicate by anything less drastic than laparotomy. In some cases improvement was obtained by measures of reassurance alone, or by the help of physical measures, such as "D. and C." or cautery to a lacerated cervix, which were carried out as diagnostic points or in an attempt to relieve other symptoms but which in themselves could not have affected the pain. In several cases, however, one was compelled ultimately to resort to major surgery, with hysterectomy, in order to restore the woman to a condition in which she could tackle the burden of life in a reasonably fit state of mind and body. Hysterectomy of course solved other problems as well as pain, being especially applicable where there was a complaint of menorrhagia or a fear of pregnancy, and especially in women of 36 years or more who already had two or three children. Some women evidently have an unconscious desire for it. It has been suggested that the basic cause of many disturbances of genital function in which no organic cause can be found and with which is associated an anxiety state is a rejection of the implications of maturity—an unconscious desire for that phase of life when menstruation, sex function, and the possibility of pregnancy do not exist. Thus the patient with dysmenorrhoea is in revolt against maturity ; the metrorrhagia and indefinite pelvic pain of the mature woman is a result of a subconscious need for the haven of the menopause. It does seem possible that in these women the uterus is a symbol of uncertainty and danger, and they will not be content or enjoy all life has to offer until that symbol of uncertainty has been removed.

Other Factors

Emotional Immaturity.—Patients were considered to be emotionally immature when their life histories showed that they had failed to emancipate themselves emotionally from their parents or from the precepts and prejudices of their childhood and adolescence. In 33 instances the degree of immaturity was such that the patients were incapable of adapting themselves to the realities of marriage and had developed neuroses as an escape from its implications. In 17 other patients problems arising from their immaturity contributed to their total anxiety load. The symptoms most commonly complained of by this group were : frigidity 40%, dyspareunia 38%, dysmenorrhoea 22%, vaginal discharge 20%, non-consummation 18%, and infertility 18%. The gynaecologist's physical findings in this group were analysed : 28% showed definite genital immaturity or "hypoplasia" and 20% vaginal discharge, 10% of which was infective. The incidence of other findings was insignificant.

Infertility.—This was a factor in the development of neuroses in 27 patients whose commonest complaints were absence of orgasm and dyspareunia. Patients in this group were often emotionally immature, and an unconscious resistance to motherhood was easily demonstrated in them.

Phobias.—Morbid fear of disease, chiefly venereal, tuberculous, or cancerous, figured as symptoms in the neuroses of 16 patients. In three patients the fear of venereal disease had its origin in emotional immaturity, and in three others in suspicion of the husband's infidelity. Patients with tuberculosis phobias were all strongly averse to further pregnancies. Their conviction that they were already infected, or would eventually develop the disease, served essentially as an excuse for the avoidance of pregnancy : usually the contraceptive method adopted was coitus interruptus. Five patients had cancerophobia ; in each case it appeared to be secondary to sex frustration. In each of these five one could perceive a thinly veiled desire for removal of the pelvic organs, seemingly expressing the unconscious urge to escape the conflicts arising

from their unsatisfied libido. A fear of cancer was possibly utilized at a higher level of consciousness as a means of rationalizing a repressed and unconscious dissatisfaction, and this substitution led in turn to various pelvic somatic symptoms, especially menorrhagia and pelvic pain.

Social Problems

Housing.—Unsatisfactory housing conditions were primarily responsible for the development of anxiety states in only two patients, who were constitutionally unstable, but in 57 patients the problem contributed to the total anxiety-load and in many instances was related to symptomatology. The lack of privacy inevitable where a couple "lived-in with in-laws" was apt to lead not only to general friction, with possibly lasting maladjustment, but also to frigidity and dyspareunia. One often elicited the confession that the patient's aversion to coitus sprang from fear of being overheard. The same inhibition was observed, although less frequently, where parents and children were compelled to sleep in the same room. The wish to postpone pregnancy till a home was obtained was almost universal.

Separation from Husband.—The absence of husbands on national service rarely figured as a significant stress factor except in emotionally unstable patients and in those whose anxiety focused on their infertility. In pregnant women, on the other hand, separation from the husband was commonly the main dynamic component in the development of neurosis.

Inadequate Social Outlets.—Lack of adequate social and recreational activities was common. Many patients had not been out with their husbands since the birth of the first child. This has an obvious bearing on marital maladjustment.

Financial Stress.—The incidence was negligible.

Psychiatric Treatment

Psychotherapy was attempted in 84 cases in which there was reasonable expectation of response to short-term treatment. The average number of interviews per patient was seven over an average period of 15 weeks. In every instance of maladjustment between patient and husband the latter was invited to come for interview. This proved so welcome to the majority of couples concerned and was so effective in shortening treatment that it was decided to hold a monthly Sunday-morning clinic specially for husbands; where relations with other members of the family were faulty those concerned were invited to come for interview. This was particularly helpful in cases of overdependence on the mother.

Psychotherapy as such aimed at improved insight, better understanding of family relations, and the recognition by the patient of the influence of emotional conflict on physical symptoms. Treatment was mostly confined to explanation, re-education, and reassurance. At no time was special emphasis laid on the psychological nature of the treatment. In the majority of cases psychotherapy was given concurrently with physical treatment, and patients were encouraged to consider the psychiatric clinic as an integral part of the gynaecological department.

Supplementary Measures

Contraception.—All patients requiring contraceptive advice were referred during the first 12 months to the local Family Planning Association clinic. The prevalence of these cases and the desirability of all treatment being co-ordinated within the department led to the establishment of a weekly contraceptive clinic restricted to cases from the department.

Social Welfare Measures.—The services of the almoner are of course invaluable in this as in other branches of medicine. Each case in this series was considered in relation to social background, as much assistance as possible being given with problems such as housing, release of husbands from national service, change in husbands' working shifts, admission of children to day nurseries, and convalescent homes. Arrangements for a convalescent holiday, sometimes solely in order to remove a woman for a short time from an unsatisfactory environment, or for the care of children who are temporarily too much for the mother to handle, play a large part in making her better able to carry on with the stresses of life, and give her a chance to profit by psychiatric advice and to "see herself."

Minor Treatment such as that of a *Trichomonas vaginalis* infection, may remove a minor symptom around which a major complex has developed, but the complex is still there and needs further measures for its resolution. Investigation of infertility, and in appropriate cases recommendation of and assistance towards the adoption of a child, may be a keynote of success. In one of our cases the patient improved markedly when she was informed that her husband was infertile and that the responsibility for lack of a family could not be placed on her shoulders. In other cases investigation of the male, even though he proved apparently fertile, reassured the patient and gave one an opportunity for making the husband realize his position in the relationship between the basic worries and the actual symptoms produced thereby. In all cases, success with minor therapeutic measures was possible only so long as the major psychological complex was being examined and dealt with by reassurance and explanation.

Combined Therapy.—In a number of cases where it was apparent that the basic disturbance was a psychological one some improvement took place after a preliminary psychiatric investigation and some elementary treatment, but one or more residual symptoms remained. Sometimes one was satisfied that even these residual symptoms were psychogenic but resistant to psychotherapy, at least of a short-term nature; in other cases it was possible that primary organic lesions were present, or that there had been a secondary development of physical changes in the pelvic organs which only radical treatment, usually surgery, would overcome. Other reasons for combined therapy included a number of dyspareunia cases where there had been long-standing difficulty, and where removal of the hymen, with perineotomy in many cases, was necessary in order that the still half-hearted efforts of the couple towards normal sex relations might encounter not even a minor physical barrier. Special comment is needed regarding one type of combined therapy—the case where successful psychotherapy must be allied with adequate contraception and where ordinary measures fail. Here surgical sterilization is justifiable and may be essential. The simplest procedure is tubal ligation, but in this type of case the unstable personality will persist and is quite likely to lead the patient at a later date into a further breakdown. It is therefore often desirable to proceed straight to subtotal hysterectomy instead of tubal ligation, as the former operation removes a potential source of further trouble with little extra risk.

Discussions and Conclusions

Dysmenorrhoea, sterility and abortions, dyspareunia, and even uterine prolapse have been attributed, in whole or in part, to psychological causes (Rickman, 1926; Wittkower and Wilson, 1940; Wittkower, 1943; Kamman, 1946; Squier and Dunbar, 1946). Mayer (1937) has suggested that the gynaecologist is himself the ideal person to carry

out the necessary psychological investigation and treatment, but he usually lacks the training required for such a task, and in any case the time element makes this impracticable in most hospital clinics. It therefore seems justifiable to include a psychiatrist and a psychiatric social worker in every gynaecological team. The psychiatric assessment and, so far as possible, the psychotherapy of a patient with well-defined gynaecological symptoms should take place within the framework of the clinic to which she has been referred, and it should not be necessary to divert her to another department, even in the same hospital. The importance of combined therapy has already been stressed, and this necessitates the closest co-operation between gynaecologist and psychiatrist.

Much neurosis with a genital background is attributable to ignorance and to faulty upbringing. In particular the incidence of frigidity and dyspareunia could be reduced by improved premarital education, including not only sex instruction but also general mental hygiene and the real value of family relations. Much unhappiness and even illness could be obviated by wider—and wiser—dissemination of proper contraceptive advice, with due regard to the temperament and character of the couple and to their religious beliefs. Midwives, health visitors, and even doctors often impress on patients the danger of further pregnancies without mentioning existing facilities for contraceptive instruction and without regard for the personal prejudices or ethical beliefs of the woman and her husband.

The prevalence of conditions of overcrowding, and the part played by ill-assorted family relations in producing many of these functional disorders, as outlined above, suggest that in some cases they might be regarded as equal with tuberculosis and other organic diseases in placing a couple high on the list of priorities for new houses.

Finally, in considering the relative importance of psychic and of somatic factors in the production of disease and disorder of the pelvic organs, and in reaching a decision on the method of treatment, a compromise must often be reached : as suggested by Deutsche (1947), the psychiatrist must always have the courage to give up, at the right moment, his own hopes of healing the patient psychically whenever the gynaecologist can eliminate an important defect more quickly ; and the gynaecologist must be prepared to withhold his knife and even his hormones when the psychiatrist advises that their use may have bad psychological results. He must also be prepared to operate, on some occasions, even in the absence of demonstrable organic disease, if his colleague can be reasonably sure that only removal of the uterus or repair of the pelvic floor will finally reassure the patient and abolish her anxiety state.

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According to a report which appeared in the *Daily Telegraph* of Aug. 17, the Airborne Forces Security Fund has financed a scheme for maintaining eight patients at a time in a special chalet attached to a sanatorium at Leysin, Switzerland. The scheme was devised for the assistance of 28 former paratroopers who are ill mainly as a result of prison camp conditions, and the arrangements at Leysin have been made because hospital accommodation was not available for many of these men in Britain.

CENTRALIZED GONOCOCCUS CULTURE FOR DISPERSED CLINICS

THE VALUE OF A NEW TRANSPORT MEDIUM FOR GONOCOCCI AND TRICHOMONAS

BY

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This paper considers the use of bacteriological cultural methods in the diagnosis and control of gonorrhoea when facilities for culture are not immediately available, and reports on the performance of a special method (Stuart, 1946) for maintaining the viability of the gonococcus in material which cannot be cultured for 12 to 24 hours after collection from the patient. The application of this method to the diagnosis of *Trichomonas vaginalis* infestations is also discussed.

When adequate bacteriological facilities are available either within a venereal diseases clinic or immediately adjacent, gonococci can be cultivated from clinical material with comparative ease. The need for culture and the advantage of adding this procedure to stained smear examination have been stressed in many recent reports (Sewell, Salchow, and Nelson, 1943 ; Reymann, 1944 ; Eldering and Palser, 1946), but the administrative difficulties have too often proved insuperable. The bacteriological investigation of gonorrhoea requires a trained bacteriologist with specialized and expensive equipment, but the necessary dispersion of clinics in big cities renders this economically impracticable. The transport of unprotected swabs to a central laboratory is feasible, but this must be done very quickly—within half an hour (Muir and Ritchie, 1937). Since work in clinics is often done in the evening and may last three or four hours, this would necessitate numerous journeys between the clinic and the laboratory and an enlarged laboratory staff—at increased cost. Other methods have been suggested, such as the transport of material in dry ice (Wortmann *et al.*, 1941), in vacuum flasks (Christiansen and Becker, 1938), or surrounded by hot-water bottles (Malcolm and Dolman, 1939). Such methods are difficult to apply except under special circumstances, and most recent authors suggest the use of slopes of solid media or tubes of fluid media inoculated in the clinic and transported to the laboratory as soon as possible (Pitts, 1940 ; Carpenter, 1943 ; Peizer and Steffen, 1943). Reymann, however, points out that a major defect of these methods is the overgrowth of contaminating bacteria which frequently occurs. The inoculation of culture plates in the clinic and their primary incubation there before transport to the laboratory is obviously equivalent to direct culture, but few clinicians have the time and experience to carry out efficiently the inoculation and incubation of culture media, and few of the simpler transport methods yield successful results if the swabs are delayed more than eight hours before culture (Carpenter, 1943 ; Morton and Lebermann, 1944).

In Glasgow we were faced with this problem of dispersed clinics in which a large amount of work was done in the evenings and from which material could rarely be brought to the central laboratory in less than 18 hours. The clinics were working under great pressure and the attending clinicians could not undertake any extra bacteriological work. Yet, particularly in the diagnosis and control of female

gonorrhoea, the need for bacteriological culture facilities was felt to be urgent. In consequence certain bacteriological investigations were carried out. These determined that oxidation, and not temperature or drying, was the basic factor responsible for the rapid death of gonococci, and confirmed that the multiplication of other bacteria at the expense of gonococci was a major disadvantage of most transport methods in which swabs were placed in a nutrient medium. The use of crystal violet (Cox, McDermott, and Mueller, 1942) and tyrothrycin (Stokinger, Ackerman, and Carpenter, 1943) as selective bacteriostatic agents was found to be completely unreliable, since gonococci themselves were often susceptible to the lowest effective concentration, as Reymann has pointed out. Therefore a non-nutrient fluid transport medium was prepared in small convenient screw-capped bottles into which swabs could be placed direct at the clinics. Anaerobiosis was maintained by a suitable reducing agent. After considerable experimental work, which is outlined elsewhere by Stuart (1946), a suitable medium was evolved and was immediately tried in clinical practice. Early results showed that gonococci on the specially prepared swabs would occasionally remain viable in the transport bottles for as long as 15 days and that they were regularly viable after 24 hours. This made a more extended investigation desirable, the nature and results of which are given below.

Methods

Medium.—A quantity of 200 ml. was found convenient to prepare at one time; 190 ml. of previously autoclaved 0.3% fibre agar in distilled water was melted and 0.2 ml. of thioglycollic acid (B.D.H.) added. Sufficient N/1 NaOH was incorporated to bring the mixture to approximately *p*H 7.2, and then 10 ml. of 20% sodium glycerophosphate in distilled water was added, along with 2 ml. of a similar 1% solution of calcium chloride. The medium was mixed thoroughly, and while still hot was titrated to *p*H 7.4 with N/1 NaOH. Then 0.4 ml. of methylene blue (0.1% in water) was added to give a final concentration of 1 in 500,000, and the medium was replaced in the steamer for a few minutes before distribution to ½-oz. screw-cap "bijou" bottles, about 7 ml. in each. Bottles with well-fitting screw caps and sound rubber washers were selected previously. The bottles with the medium were sterilized for one hour in the steamer. On removal one or two bottles were used to fill up the remainder, so that each bottle contained a quantity of medium sufficient to ensure its being absolutely full when the swab was added, with the ultimate object of excluding as much air as possible. The caps were screwed down firmly and the bottles were kept for at least 24 hours before issue. If oxidation was then evident in any bottle, shown by the blue colour of oxidized methylene blue, that bottle was rejected.

Clinical Outfit.—This consisted of one of the above bottles and a sterile wooden applicator tipped with an absorbent cotton-wool swab in a plugged tube. The swab and stick required special preparation, since both tended to be acid before treatment. For this reason sticks and cotton-wool were first boiled in Sorensen's phosphate buffer solution *p*H 7.4, then dried in the oven before being prepared for use.

Specimen-taking.—After superficial cleansing of the vulva the urethra was massaged to express any exudate and specimens were taken on swabs for smear and culture. A bivalve speculum was used to dilate the vaginal canal, the vault was mopped with dry sterile cotton-wool, and swabs were taken direct from the cervix. The swabs for culture were placed immediately in the transport bottles so that they reached about three-quarters down the medium. The sticks were then broken off or cut with scissors and the caps screwed down firmly.

Culture.—The meat-extract agar described by McLeod *et al.* (1934) was used as a basis for all media, usually one unheated and one heated horse-blood-agar plate being used for each specimen. Various methods of inoculating the culture plates were employed. The swab was extracted from the bottle with small artery forceps and was either applied direct to a quadrant of each plate or was rubbed in 0.2 ml. of peptone water in a small tube. The second method allowed the dispersion of a more regular inoculum by a Pasteur pipette. One drop of the peptone-water suspension on the unheated blood-agar plate and two drops on the chocolate plate were found to be generally suitable amounts. The initial inoculum was then spread over successive quadrants of the plate with a platinum wire or a glass spreader. Culture plates were incubated at 36° C. in biscuit tins containing 10% CO_2, produced by a calculated weight of marble dropped into a small container of 20% HCl within the tin just before the lid was put on. Later, tablets containing the correct amount of sodium bicarbonate were found more convenient in use.

Reports.—Cultures were incubated for 48 hours before report, but often gonococci could be identified in 24 hours. A positive report was based on colony morphology, a positive oxidase test, and typical microscopical findings. Fermentation tests were carried out regularly to control early results, but with increasing experience were found necessary only in doubtful cases.

Results

Gonococci

In the majority of instances smear preparations were examined in the clinic by workers experienced in this type of microscopical diagnosis. In assessing the value of the transport culture method these results were accepted, except that "doubtful" findings were disregarded as being of no clinical value. Table I gives the results of smear and culture

TABLE I.—*Comparison of Smears and Cultures from Adults (844 specimens)*

Smear: / Culture:	+ / +		+ / 0		0 / +		0 / 0		+ / c		0 / c	
	M	F	M	F	M	F	M	F	M	F	M	F
Suspects	44	53	1	13	0	29	9	241	0	0	0	2
Chronic and test for cure	14	2	3	7	7	9	55	349	0	2	2	2
Total ..	113		24		45		654		2		6	

c = culture contaminated by spreading organism. + = positive. 0 = negative.

in a series of 844 separate specimens from male and female adults.

It can be seen that cultural investigation added over 32% more positives to the number detected by smear examination alone, and diagnosed 86% of the total positives compared with 76% by smear examination. The success or failure of culture was probably determined by many factors, of which minor variation in the quality of the culture media was perhaps most important, and delay in culture least. Table II shows the influence of this time factor, 12

TABLE II.—*Effect of Delay in Culturing Specimens*

Smear: / Culture:	+ / +	+ / 0	0 / +	0 / c
≤12 hours	11	0	5	0
>12 hours	102	24	40	2

hours being chosen as the mean. The average interval between taking the swab and its culture in one set of specimens was six hours and in the other 18 hours. There is no significant difference between the results, whether the specimens were less or more than 12 hours old.

Culture results in 82 specimens from children were superficially not so satisfactory. No acute positive, however, was missed; but 13 "test for cure" specimens out of a total of 16 positives were discovered by smear examination only. The majority of these patients had been under treatment from several months to two years and many showed no clinical manifestation of disease.

The relative efficiency of smear and culture was not significantly different in urethral or cervical specimens, but slightly more urethral cultures were positive when smears were negative. In general, urethral cultures were of greater

diagnostic value than cervical cultures. In 32 cases both swabs were positive, but 18 urethral swabs were positive when the corresponding cervical swab was negative, and only eight cervical swabs when the urethral swab was negative.

Trichomonas

During this investigation it was accidentally discovered that *T. vaginalis* remained alive and active in the transport medium. The detection of these organisms was simple. A drop of peptone-water suspension prepared from a swab was placed on a clean slide under a coverslip and examined microscopically with reduced illumination. Frequently the presence of the parasite could be detected with a 2/3-in. (1.7-cm.) objective (× 60) by its active jerking movements, and brisk flagellar movement could be seen regularly with a 1/6-in. (0.4-cm.) objective (× 240). To determine the reliability of this method of examination, 401 consecutive specimens, including a number from males and children, were examined in parallel by the simple wet-film method and after Leishman staining. To make the examination of direct comparative value the wet film was examined first and the result recorded as positive only if distinct movement, either organismal or flagellar, was seen. Then the coverslip was removed carefully, the fluid on the slide concentrated on as small an area as possible and fixed in the usual manner. Thus the same specimen was examined by the two methods. Staining and further examination were carried out independently by another worker with many years' special experience in this type of investigation. In spite of the apparent advantage of the stained film (Table III) it was found that in only two instances were more than one or two trichomonads present in the 28 positives not detected by wet film, so in view of the latter's simplicity it was adopted as a routine. In all, 710 consecutive specimens were examined by this method (Table IV). Of 312 adult women examined *T. vaginalis* was found in 139. The incidence in patients with gonorrhoea was 20 out of 45, in patients with non-specific leucorrhoea 73 out of 144—in both instances approximately 50%. However, in a series of 123 women examined as a test for cure and in whom no clinical symptoms were manifest 46 were found to be positive—an incidence of more than 37%.

TABLE III.—*T. vaginalis : Comparison of Stained Film and Wet Film*

Stained Film:	+	+	0	0
Wet Film:	+	0	+	0
≤12 hours	16	4	5	42
>12 hours	65	24	7	238
Total ..	81	28	12	280

TABLE IV.—*Incidence of T. vaginalis*

	Urethra		Cervix (Adults)	Vagina (Children)
	Male	Female		
Positive	2	60	120	2
Negative	39	237	191	59

Discussion

The success and simplicity of the above transport method recommend its use in clinical venereal disease practice. The principle that the prevention of oxidation helps to maintain gonococcal viability in transport material has been established by experience. Nevertheless, in common with many other newly established techniques unexpected difficulties have arisen. It has been found that many batches of agar now available are unsuitable, perhaps because of their content of a bacteriostatic or bactericidal substance described by Ley and Mueller (1946). Recent experiments suggest that these difficulties may be circumvented comparatively simply, and it is hoped to publish shortly a description of the amended technique. The difficulty associated with the overgrowth of other bacteria does not arise in the method described, but the discovery of an effective selective bacteriostatic agent would still be of great benefit in culture by allowing a much larger inoculum to be used.

The value of cultural investigation of gonorrhoea is now probably universally accepted. Certainly in female gonorrhoea the difficulties which face the clinical worker dependent solely on the results of smear examinations cannot be overemphasized. Most observers will agree that a smear from an average mixed infection in a female always shows the presence of organisms with some morphological resemblance to gonococci. Many of these are Gram-negative coccobacilli which have often a distinct tendency to coccal morphology in exudates. De Bord (1943) described many of the organisms which may be mistaken for gonococci by simple microscopical examination. *Neisseria* other than gonococci are not uncommon, but in culture their identity is readily established. In the above series such organisms were isolated on three occasions.

Many striking examples of the advantage of culture have been noted in the above investigation. Six successive smears from one woman were negative, yet the first culture taken was positive. In many women known to have been in contact with a case of gonorrhoea no clinical signs were discovered, yet positive cultures were obtained. Coincident with this or soon after, frank clinical evidence of infection appeared in some of the patients. In spite of the numerous successes, however, failures have also been recorded. Some of these are possibly explicable by adventitious factors. A number of patients were found to have been swabbed in error with a weak antiseptic lotion before the specimen was taken. The persistence of this old clinic routine was only discovered late in the investigation, when the patients affected could no longer be traced. Again, specimens for smear examination were always taken first, and this practice may have weighted the scales in favour of smear examination. Nevertheless, we are convinced that a few strains of gonococci are peculiarly difficult to grow. Such strains have been recorded by Lankford *et al.* (1943). Using media similar to those we employed, Weller and Williams (1946) obtained cultures from only 76% of known positives. Media which are supposed to give better results are now being investigated, but it seems unlikely that complete success will be achieved so long as gonococci have to compete on equal terms with more vigorous contaminating bacteria. It is probably the consensus of modern opinion that even the well-established Loeffler's serum for *Corynebacterium diphtheriae* fails in from 5 to 30% of cases, and greater success has been obtained only since the introduction of potassium tellurite, a selective bacteriostatic agent. In the culture of the gonococcus final success awaits the introduction of such an agent. Perhaps some of the new antibiotic substances may be suitable for the purpose, and it is unfortunate that workers in this field so often seem to abandon further investigation of bacteriostatic substances which prove inactive *in vivo*.

At present we believe that smear and culture investigations are complementary and that successful diagnosis and control of gonorrhoea, in females at least, demand the application of both. The difficulty of applying cultural methods to specimens taken from dispersed clinics has been largely resolved by the transport method described, and we hope that this will prove of value to other workers.

The evidence presented in this paper of trichomonad infestation will not increase clinical belief in the pathogenic importance of this parasite. The very high incidence of the organism in the female genital tract without any inflammation or discharge may suggest very legitimately that its presence in inflammatory exudates is coincidental rather than causative. It may also be pointed out that the detection of *Trichomonas* was merely incidental to this investigation and that the specimens were not those generally considered best for the purpose. It is quite possible that in some women vaginal irritation may be caused by *T. vaginalis*, but to ascribe to it the importance it commonly gets because of its frequent presence in leucorrhoea is an example of *post hoc ergo propter hoc* reasoning which cannot be substantiated by the facts at present available. Further investigation of its occurrence in normal women is obviously desirable. The transport method described allows the investigation to be carried out more leisurely and conveniently than has hitherto been regarded possible.

Summary

A method of transporting specimens for the diagnosis of gonorrhoea is described. By its use facilities for culture can be made available to all clinics within a "time distance" of 24 hours from a laboratory.

The method is at the same time applicable to the detection of *T. vaginalis*.

In the above investigation of gonorrhoea 139 positives out of 184 were found by smear examination alone and 158 by culture. The combination of smear and culture discovered 24% more positives than smear examination alone, and culture alone 10% more than smear.

T. vaginalis was found in approximately 50% of women with vaginal discharges and in almost 40% of women in whom no evidence of inflammatory disorder was evident and who were examined as a test for cure of gonorrhoea.

FOOTNOTE.—Since this paper was written an alteration in technique has been found necessary owing to the bactericidal action on *Neisseria* of certain later batches of agar used in preparing the transport medium. This property is apparently the same as that described by Ley and Mueller (1946), and is particularly prominent in the absence of nutrient material which is a feature of the medium described. The inhibitory effect can be neutralized by charcoal (Stuart, 1947), but charcoal cannot be incorporated in the medium without absorbing the methylene-blue reduction indicator. Accordingly, swabs are prepared as described above and then dipped in a 1% water suspension of finely ground charcoal (B.D.H. blood charcoal and "norit" have been found equally suitable) before being dried and sterilized. Results from a year's experience with these charcoal-impregnated swabs are significantly better than those given above, and suggest that even when the agar is apparently free from inhibitor this alteration in technique is desirable.

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THE ROLE OF ABDOMINAL TRAUMA IN ACUTE APPENDICITIS

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Abdominal trauma as a causative or contributory factor in the development of acute appendicitis occasionally merits attention, as the symptoms of that condition have appeared very soon after receipt of the injury. Boyd (1947) states that "there is no doubt that a blow on the abdominal wall may occasionally *precipitate an acute attack of appendicitis*." J. B. Murphy (1908) cites an analysis by von Neumann of 152 cases of acute appendicitis in 10 of which trauma, either from direct injury to the abdomen or from strain during lifting, was a causative factor. Romanis and Mitchiner (1937) observe that "in some cases injury undoubtedly stimulates an attack, but this is rare . . . it is possible that a twist, blow, or strain . . . will cause a concretion to move and completely block the appendix."

The role of trauma as an exciting factor in the production of acute appendicitis assumes importance from the medico-legal aspect when abdominal injury received during employment is advanced to procure compensation in the courts. Quite recently two cases of acute appendicitis have been encountered immediately after abdominal injury. As both occurred in children of school age, where the motive for procuring compensation did not arise, it is of interest to record them.

Case 1

A schoolboy, aged 14, on mounting his bicycle at 9.50 p.m. on Feb. 15, 1948, missed the pedal and fell forward, and the left handlebar struck him forcibly in the centre of the epigastrium. He had momentary upper abdominal pain, but almost immediately mounted his cycle and reached his home at 10.5 p.m. When in bed, about 10.30 p.m., he experienced soreness in the upper abdomen, but fell asleep. He woke about 3.30 a.m. with generalized colicky abdominal pain, and vomited, after which the pain localized in the right iliac fossa. His pain persisted, and he vomited twice more before his admission to hospital at 10 a.m on Feb. 16, twelve hours after the receipt of the injury. He had not had his bowels open since his injury; there was no abnormality of micturition; and there was no previous history of a similar attack.

On examination the temperature was 99.4° F. (37.4° C.), pulse 84, respirations 16. The patient was pale and evidently in pain. His tongue had a light yellow fur, and there was slight fetor oris. The abdominal wall was immobile on respiration, with resistance and tenderness in the centre of the epigastrium above the umbilicus. Tenderness and guarding were greatest in the right lower abdominal quadrant, where "release pain" was also elicited. There was no loss of liver dullness. Rectal examination revealed tenderness maximal towards the right side of the pelvis. The urine contained no abnormal constituents. The blood pressure was 120/90.

A provisional diagnosis of a ruptured hollow viscus, probably upper jejunum, was made, and laparotomy was decided on.

Operation.—Under thiopentone, 0.5 g., nitrous-oxide–ether-and-oxygen anaesthesia, the abdomen was opened through a right paramedian incision, greater in extent above the umbilicus than below. The stomach, duodenum, and duodeno-jejunal junction were normal. There was a very fine frothy exudate

on the surface of the duodenum and upper jejunum, but no lesion was found here or in the ileum. The gall-bladder and pancreas were normal. The caecum was delivered, and immediately a gangrenous appendix was seen. It had not perforated. Appendicectomy with invagination of the stump was performed and the abdomen closed without drainage.

On section the appendix showed a hard faecalith impacted about ½ in. (1.25 cm.) from the base. Distal to this point the lumen of the appendix was filled with foul-smelling dark blood-stained mucopus. The mucosa was gangrenous and showed patchy ulceration. Recovery was uninterrupted, and the patient was discharged on Feb. 26.

Case 2

At 3 p.m. on March 10, 1948, the patient, a schoolgirl aged 14, slipped while turning a somersault on the horizontal bar, which struck her across the centre of the abdomen. She continued with her exercises, but about three hours later experienced colicky abdominal pain, which became worse during the night. She vomited twice, after which the pain localized in the right iliac fossa. She had diarrhoea twice during the night. There was no abnormality of micturition or of menses. She had no history of a previous similar attack. The patient was admitted to hospital at 2.30 p.m. on March 11, 24 hours after receipt of the abdominal injury.

On examination the temperature was 100° F. (37.8° C.), pulse 100, respirations 20. The patient was flushed and had a rather dry tongue. Fetor oris was present. There was marked tenderness with muscular guarding and "release" pain confined to the right iliac fossa. Rectal examination revealed well-defined tenderness towards the right side of the pelvis. The urine contained no abnormal constituents. The blood pressure was 110/80. A diagnosis of acute obstructive appendicitis was made.

Operation.—Under thiopentone, 0.5 g., nitrous-oxide–ether-and-oxygen anaesthesia, a McBurney muscle-splitting incision was made, and a gangrenous appendix lying towards the brim of the pelvis was found. It had not perforated. Appendicectomy with invagination of the stump was performed. The abdomen was closed without drainage. On section the appendix was found to have a faecalith impacted in its lumen, just distal to its base. Beyond this point the appendix contained light reddish-brown mucopus. The mucosa showed gangrenous patches. Recovery was uneventful, and the patient was discharged home on March 18.

Commentary

It is interesting to observe that both cases had a faecalith impacted in the lumen of the appendix. It is reasonable to conjecture that the increased intra-abdominal pressure resulting from the abdominal injury might conceivably force a faecalith already formed at the base of the appendix more distally into the lumen, thereby precipitating an attack of acute obstructive appendicitis.

One might justifiably conclude in a case of acute appendicitis immediately following abdominal trauma, *where the presence of a faecalith impacted in the lumen of the appendix was found at operation*, that the injury was a contributory and causative factor of the attack.

I should like to thank Mr. D. G. C. Tasker for his interest in and advice on this paper.

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On July 6 *x*-ray and electro-medical apparatus worth £3,500 was officially handed over to the Children's Clinic of Poznan University, Poland, by the General Sikorski Memorial Hospital Fund. A ceremony was held at Century House (Philips Electrical, Ltd.), London, makers of the equipment. His Excellency the Polish Ambassador, representing Poznan University, received an illuminated scroll commemorating the event from Mrs. E. d'A. Willis and Major Rowland Sanders, Trustees of the General Sikorski Memorial Hospital Fund.

Medical Memoranda

A Case of Intrauterine Amputation due to External Trauma

The following case is recorded because of its apparent rarity. Search of the literature has failed to reveal any case exactly similar, although undoubtedly such cases have occurred—e.g., during air raids—without being recorded.

CASE HISTORY

A second gravida aged 27 was admitted to hospital at 3 p.m. on March 30, 1946, about one and a half hours after a motor accident in which she had been thrown out of the near-side window on to the grass verge, where she had been pinned down for about 30 seconds by the running-board of the overturned car, which had come to rest across her abdomen. She stated that she was about 5½ months pregnant, the pregnancy being normal, as had been her previous pregnancy and confinement. She complained of constant severe pain over the whole abdomen ; there had been no vomiting or loss of consciousness, and she felt quite well apart from the abdominal pain.

On examination the temperature was 97.6° F. (36.4° C.), pulse 74, respirations 18, B.P. 125/80 ; there were no abnormal physical signs in the respiratory, cardiovascular, and central nervous systems. Examination of the abdomen showed a uterine swelling corresponding in size to a 24-weeks pregnancy ; the foetal heart was heard faintly, but no foetal movements were detected, though the patient stated that she had felt movements since the accident. There was a transverse linear bruise at the level and to the right of the umbilicus overlying an area of deep tenderness. There was no abdominal rigidity or muscular guarding and no evidence of free fluid in the peritoneal cavity. The uterus was not actively contracting and gave no sensation of "woodiness." Bleeding per vaginam did not occur and a vaginal examination was not made.

Morphine, 1/6 gr. (11 mg.), was given every four hours, and the patient passed a quiet night. The following morning her condition was not materially altered. There was no abdominal pain. The foetal heart was still thought to be heard, but the height of the uterus had increased to that of a 28-weeks pregnancy, and there was slight vaginal bleeding. Accidental haemorrhage was provisionally diagnosed, and conservative treatment consisting of "nembutal," 1½ gr. (0.1 g.) eight-hourly, progesterone, 1 ml. on alternate days, and "ephynal," 1 tablet thrice daily, was given for three days. During this time the foetal heart was not heard, there was no increase in size of the uterus, and no further vaginal bleeding.

Five days after admission (April 3) she had a brisk vaginal haemorrhage, losing approximately 30 oz. (850 ml.) of bright blood. Rectal examination revealed that the cervix was three fingers dilated and that the membranes were bulging. The patient was having weak but regular pains and the height of the fundus had fallen to the level noted on admission. Twenty-four hours later there was spontaneous delivery of a 26-weeks foetus, followed immediately by the placenta and about 10 oz. (280 ml.) of old blood. She was given 1 ml. of ergometrine intramuscularly and the uterus contracted firmly.

The foetus was normally developed and showed early signs of maceration. The left leg was almost completely severed from the body at the level of the anatomical neck of the femur, remaining attached only by the fibres of the quadriceps muscle. The remaining muscles had been neatly divided at the level of fracture of the femur. Apparently the foetus had been lying in the R.O.P. position at the time of injury, whereby the impact of the running-board of the car had been transmitted to the posterior surface of the left thigh, resulting in an almost complete traumatic amputation of the limb *in utero*.

A detailed examination of the foetus was impossible, as it was unfortunately disposed of by mistake before further examination could be made.

It is worthy of comment that the foetus, which was relatively well protected by its position and its covering, should have suffered severely, while the uterine and abdominal walls, which were subjected to the direct impact, showed minimal damage.

Our thanks are due to Mr. D. W. Currie, consultant obstetrician, and to Dr. W. McIntosh, medical superintendent, St. James's Hospital, Leeds, for permission to submit these notes for publication.

R. F. LAWRENCE, M.D., M.R.C.O.G.
D. SHERMAN, M.R.C.S., L.R.C.P.

Reviews

RECENT PATHOLOGY

Recent Advances in Pathology. By Geoffrey Hadfield, M.D., F.R.C.P., and Lawrence P. Garrod, M.D., B.Ch., F.R.C.P. Fifth edition. (Pp. 363; 60 illustrations. 21s.) London: J. and A. Churchill. 1947.

When a book has reached a fifth edition it is interesting to turn back to the original volume and see how the subject has progressed. The first edition of "Hadfield and Garrod" came out in 1932, its deliberate purpose to chronicle recent advances, and comparison gives us a record of the new facts which have been discovered in the last sixteen years and, what is of greater interest, the changes in thought and method that have occurred within this period. The first impression is of an increasing complexity—pathology seems so much more difficult than it used to be—and an increasing devotion to detail with a corresponding blurring of the stronger lines of the picture. A second, and a very welcome one, is a certain loss of didacticism and of that tendency to catalogue causes and classify effects into those neat echelons, battalions, and regiments so dear to the heart of the examinee.

In this period of its existence the book has shrunk from 390 to 351 pages, and owing also to the use of inferior paper it is a slimmer and altogether handier book than it was in 1932. The general trend has altered remarkably little; only one or two new full subjects have been considered—e.g., the reticuloses and reticulo-sarcoma, and recent work on inflammation and allergy—but the matter is completely different even though chapter headings may remain the same. This comparison of what was recent with what is evokes some unmanly nostalgia and provides opportunity for gentle cynicism. "Nephritis" is perennially new, and, as before, the recent advance is one of nomenclature. Gone are Bright, Gull and Sutton, Samuel West, McLean, Volhard and Fahr, Dorothy Russell, John Gray, Dunn, Fishberg, and the rest—and Ellis is the new prophet. *Où sont les neiges d'antan?* And yet the "mixed types" are still with us to confound the most ingenious of nosologists, and the stage awaits the next performer. Gone are tissue culture, vitamins, tumours of the central nervous system, and encephalitis and lead therapy.

> "Half the marvels of my morning, triumphs over time and space
> Staled by frequence, shrunk by usage into commonest commonplace."

Spiroptera neoplastica shuffles away under the alias of *Gongylonema*, and the authors pronounce its valedictory with faint regrets. What a romantic story it makes for us! In its heyday it got Fibiger a Nobel prize: surely justice demands some condign reward for Passey. The gaps have been filled by a good review of recent work on inflammation and related conditions, a full account of hepatitis and liver necrosis, and an excellent survey of the cancer problem. It would have been easy for the writers to have resorted to scissors and paste, but they have withstood this temptation and have given the reader a summary of new facts and views and also their own valuable judicial comments on most questions.

It would hardly be in keeping with custom to close this review without some criticism, and after patient research the writer has discovered that Cullumbine (p. 7) is spelt for the harlequinade (no doubt the professor of physiology at Colombo is accustomed to this—yet it may irk), and that Fig. 5 has lost much of the freshness it had in the Bart's Hospital Reports of 1939. The style and language of the book are such as would be expected from teachers of the experience of the authors, but we wince a little at "benzolised" (of rabbits) and recoil ("definitely") from "cancerisation." This is a book which every aspirant for higher medical qualifications must read and every teacher of pathology should own.

J. HENRY DIBLE.

DEVELOPMENT OF CEREBRAL CORTEX

The Postnatal Development of the Human Cerebral Cortex. By J. LeRoy Conel, Professor of Anatomy, Boston University School of Medicine. Volume 3: The Cortex of the Three-month Infant. (Pp. 158; 104 plates. $12.50 or £3 10s.) Massachusetts: Harvard University Press. London: Geoffrey Cumberlege (Oxford University Press). 1947.

The third volume of Dr. Conel's comprehensive study of the post-natal development of the human cerebral cortex has now appeared. It comprises a detailed description of the cyto-architecture of the cortex of the three-month-old infant, and like the preceding volumes is documentary rather than explanatory. Almost half the volume is made up of an atlas of excellently produced photomicrographs illustrating the various areas of the cortex as they appear in sections stained with cresyl violet, the Cajal silver technique, and the Golgi–Cox method. This book will undoubtedly be useful as a work of reference for those concerned with the study of the maturation of the central nervous system and its functions.

OPHTHALMOLOGY IN GENERAL PRACTICE

Clinical Ophthalmology for General Practitioners and Students. By H. M. Traquair, M.D., F.R.C.S.Ed. (Pp. 264; 72 illustrations, including 8 coloured plates. 25s.) London: Henry Kimpton. 1948.

No one but Traquair would have had the courage to write a treatise on "ophthalmology without an ophthalmoscope." The purpose of the book is to help the general practitioner (who is assumed not to know how to use the ophthalmoscope—a shocking assumption, but too often true) to advise his ophthalmic patients in a common-sense way and without specialized techniques. The book is in no sense a textbook of ophthalmology, but the author emphasizes common ocular complaints and symptoms and indicates their importance and when expert help should be sought. Within these somewhat severe limitations the book is very readable and full of practical teaching. The most valuable chapter is probably that on common misconceptions and prejudices, where the author admirably discusses popular ideas on such topics as the effect of near work on myopia, the "weakening" influence of spectacles, the "sin" of reading in bed, and so on. The book is worth reading by both the general practitioner and the specialist; but it would have been happier not to dedicate it to the medical student, who surely should not start his career without an ophthalmoscope.

STEWART DUKE-ELDER.

MENTAL HEALTH

Personal Mental Hygiene. By Dr. Thomas Verner Moore, O.S.B., M.D., Ph.D. (Pp. 331. 21s.) London: William Heinemann (Medical Books) Ltd. 1947.

The author's object is to show that high ideals and principles can do much to ensure emotional stability and so enable a man to avoid the development of both psychoses and psychoneuroses. Written by a Catholic priest who is professor of psychology in a Catholic university, it is natural that Catholic doctrines and observances should constitute the high ideals and principles. The author's thesis involves two premises—namely, that everyone can or should accept Catholic teaching and the Catholic way of life, and that if from the start the training, beliefs, and practices of a person are right he should not fall mentally ill. While no one will deny that the Catholic principles and way of life are of a high order, it is improbable that everyone can accept or practise them, and even if they were to it seems unlikely that mental illness would disappear.

None the less, since this book is about personal mental hygiene, what the individual can do for himself, we must not complain if the treatment of the subject appears superficial and allows too little for deep-seated constitutional factors and the subsequent struggle between what the Freudians would call the id and the superego, a struggle which cannot be altogether prevented or controlled by outside influences. Thus, in discussing the paranoid reactions the author suggests that training in tolerance would make much difference, yet it seems unlikely that a paranoiac would be able to control his ideas of reference however much he strove to develop tolerance from however

early an age, for the good reason that the paranoiac cannot be tolerant. We detect a certain bias, not only religious but patriotic, when he cites Hitlerite Germany as the paramount unstable nation, a proposition with which we might well agree; but should we agree so readily that the U.S.A. is the paramount example of the stable nation? The author illustrates his points both from the lives of his own patients and from those of famous men. Abraham Lincoln overcame early depression and failure by faith and personal effort and Joyce Kilmer by overcompensation and reinterpretation—regarding suffering as an interesting experience and even "great fun." On the other hand Oliver Goldsmith suffered from an unrestrained emotional life without any definite goal, Dante Gabriel Rossetti from a failure to react to evil influences, and Swinburne from pandering to his masochistic impulses, while Francis Thompson recovered from his drug-addiction by religious sublimation.

The author compares the family to a monastic community and contrasts the influence of schools which impose discipline with those that allow their pupils to follow all their impulses. There is no doubt that there would be much less mental trouble and unhappiness if we could ensure that all children were brought up in happy, loving, well-regulated homes and if we could avoid alcohol, syphilis, and arteriosclerosis, though we might not agree with the author's assertion that the last was due almost exclusively to excessive smoking. Altogether there is much sound sense in this book and all could read it with profit, though the appeal of the author's contentions will be especially appreciated by his fellow Catholics.

R. G. GORDON.

HUMAN REPRODUCTION

Fundamentals of Human Reproduction. By Edith L. Potter, M.D. Illustrated by Alvin W. Meyer, F.A.A.R. (Pp. 231; illustrated. $3.50 or 21s.) New York and London: McGraw-Hill Book Company, Inc.

This book is one of a series written for nurses, and the authoress is lecturer to the nurses at the Chicago Lying-in Hospital. Her intention is to present an easily readable book on reproduction in the human female. She discusses the fundamentals of cytology and genetics, the anatomy and physiology of the reproductive system, the mechanism of implantation, intrauterine development, and the formation of the body organs. Finally, she gives an account of the birth and future life of the infant.

The book is remarkably easy to read, for the style is not particularly condensed and the authoress emulates Gibbon in collecting a large amount of material into a little space. The line drawings are very good and the photographs well chosen. It is an outstanding book and should have a wide appeal. It will interest senior obstetricians and gynaecologists, for it is remarkably up to date, and the author has described the modern problems of meiosis, genetics, and heredity simply and accurately. It is suitable for senior medical students, particularly those reading for the primary fellowship examination, and seems to contain far more than is required for the nursing profession.

WILFRID SHAW.

A Manual of Fractures and Dislocations, by Dr. Barbara Bartlett Stimson (Henry Kimpton; second edition, 17s.), is designed for medical students and general practitioners. It contains in the first sixty pages, which are devoted to general considerations, many excellent and clearly stated principles—in fact almost all the good conservative doctrines which should form the basis of intelligent management of fractures. However, many important fractures and their complications are discussed very briefly indeed. A few examples will serve to illustrate this. Fractures and dislocations of the spine including cord injuries occupy six pages, fractures of the pelvis two pages, which include two sentences on visceral injuries. The author describes pinning of fractures of the femoral neck in one sentence and Volkmann's ischaemic contracture in one short paragraph. That there is in places some disproportion may be seen from the fact that in contrast to these there are five pages on dislocations of the clavicle. Description of the individual fractures is clear and should be easily understood. The space devoted to the pathology of each fracture and dislocation might perhaps have been put to better use. The book is copiously illustrated with good line drawings. As a primer for medical students or as a fracture book for nurses it should prove useful.

BOOKS RECEIVED

[*Review is not precluded by notice here of books recently received*]

Manual of Leprosy. By E. Muir, C.M.G., C.I.E., M.D., F.R.C.S.Ed. (Pp. 208. 17s. 6d.) Edinburgh: Livingstone. 1948

A practical manual of diagnosis and treatment.

Textbook of Chiropody. By M. J. McKenzie Swanson, B.Litt., F.Ch.S. (Pp. 212. 20s.) Edinburgh: Livingstone. 1948

An illustrated practical account of chiropody.

A Way to Natural Childbirth. By H. Heardman. (Pp. 124. 7s. 6d.) Edinburgh: Livingstone. 1948.

Practical instructions for the mother-to-be and physiotherapists.

Aseptic Treatment of Wounds. By C. W. Walter, A.B., M.D. (Pp. 372. 45s.) New York: Macmillan. 1948.

An account of the technique of asepsis in surgery.

Chest Examination. By R. R. Trail, *M.C.*, M.A., M.D., F.R.C.P. 3rd ed. (Pp. 170. 12s. 6d.) London: Churchill. 1948.

A manual for the medical student.

Reproduction and Survival. By R. C. Brown, M.B., M.S., F.R.C.S., F.R.C.O.G. (Pp. 108. 6s.) London: Arnold. 1948.

An account of the physiology of reproduction, fertility and sterility, and labour as an instrument of natural selection.

The Beginnings of Modern Medicine in Madras. By D. V. S. Reddy. (Pp. 244. 5 rupees.) Calcutta: Thacker. 1947.

A history of modern medicine in India.

Aids to Biology. By R. G. Neill, M.A. 2nd ed. (Pp. 279. 6s.) London: Baillière, Tindall and Cox. 1948.

Intended for medical students and others.

The Ides of March. By Thornton Wilder. (Pp. 198. 9s. 6d.) London: Longmans. 1948.

A novel set in the Rome of Julius Caesar.

Acute Intestinal Obstruction. By Rodney Smith, M.S., F.R.C.S. (Pp. 259. 18s.) London: Arnold. 1948.

A manual of diagnosis and treatment.

Dental Practice Management. By S. L. Drummond-Jackson. (Pp. 370. 30s.) London: Staples. 1948.

An account of the administration and business management of dental practice.

The Yearbook of Psychoanalysis. Edited by S. Lorand, M.D., *et al.* Vol. 3. (Pp. 309. 30s.) London: Imago. 1947

Papers on different aspects of psycho-analysis.

The Neglected Child and His Family. By a subcommittee of the Women's Group on Public Welfare. (Pp. 140. 5s.) London: Geoffrey Cumberlege. 1948.

A study of the neglected child in his home and of the relevant law and administration.

The Case of Augustus D'Este. By D. Firth, M.A., M.D., F.R.C.P. (Pp. 58. 6s.) Cambridge: University Press. 1948.

A collection of letters and diaries written by or relating to Sir Augustus d'Esté, who had disseminated sclerosis, giving an early clinical account of the disease.

That Which is Caesar's. By H. G. Woodley. (Pp. 158. 8s. 6d.) Oxford: Pen-In-Hand. 1948.

Comments on the treatment of mental disorder by one who was confined to a mental asylum for a year.

The Acute Bacterial Diseases. By H. F. Dowling, M.D., F.A.C.P. (Pp. 465. 32s. 6d.) London: Saunders. 1948

A textbook of diagnosis and treatment.

Nature's Way. By R. Mallett. (Pp. 58. 3s. 6d.) London: Watts. 1948.

Described as "a means of health without medicine"

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CHLOROMYCETIN

The latest antibiotic to gain a place in the chemotherapy of disease is chloromycetin, which was originally obtained from a streptomyces found in the soil of a field near Caraças, Venezuela, by Ehrlich and his colleagues[1]; it has now also been isolated from a streptomyces found in a compost heap in Illinois.[2] A preliminary examination of the antibiotic activity of chloromycetin by Smadel and Jackson[3] showed that in addition to having some action on viruses of the psittacosis-lymphogranuloma group it inhibited the growth of a number of pathogenic rickettsiae both in experimental animals and in developing chick embryos. Chloromycetin is active when given by mouth, and Ley and his co-workers[4] showed that a dose of 1.0 g. by mouth daily for 11 days caused no abnormal signs or symptoms. The substance is found in the greatest quantity in both blood and urine two hours after an initial dose of 1.0 g. by mouth, the estimation being carried out by a method of microbiological assay which involves inhibition of the growth of *Shigella paradysenteriae* (Sonne). After two hours the blood levels steadily fall from about 6 μg. per ml. till at eight hours detectable amounts are no longer found. Urine levels of the drug are approximately 200 μg. at two hours, falling to 50 μg. per ml. at eight hours and remaining at this level for the next 10 days of treatment. When an initial dose of 2.0 g. of chloromycetin is given blood levels are 10 μg. per ml. at two hours and above 5 μg. at the end of eight hours. Urine levels are highest at two hours, reaching values of 380 and 670 μg. per ml. and falling to about 10 μg. per ml. at eight hours. The fact that appreciable amounts of chloromycetin are found in blood and urine 30 minutes after being given by mouth indicates that the antibiotic must be rapidly absorbed from the gastrointestinal tract. Approximately 10% of the total amount of chloromycetin given daily was recovered in active form in the urine of volunteers; much must therefore be metabolized. No signs or symptoms attributable to toxicity were observed in three volunteers during or after the treatment; examination of the blood and urine showed no abnormalities. Since the drug is rapidly excreted or inactivated its administration at fairly frequent intervals is obviously necessary.

The activity of chloromycetin and its lack of toxicity have been confirmed by Smadel and his colleagues,[5] who used it in the treatment of cases of typhus fever in Mexico. Three adults and one child were suffering from epidemic louse-borne typhus and one child from the murine type. One of the adults was very severely affected and was not treated till the seventh day of illness; then 1.5 g. was given by mouth, followed one hour later by 1.5 g. and thereafter 0.2 g. every two hours for four days and subsequently 0.2 g. every three hours for three days. The other two adults first treated on the fifth and sixth days of illness received an initial dose of 1.0 and 2.0 g. respectively, followed by 0.2 g. every four hours for the next three to four days. In the patient given the largest doses blood levels of 40.5 μg. per ml. and urinary levels of 400 μg. per ml. were attained; in the other patients the maximum blood levels were 5 and 11.5 μg. per ml. and the urinary levels 100 and 220 μg. per ml. The most noticeable result in all cases was the rapid fall in temperature while the rash remained unchanged. Results in the children were less easy to judge, since typhus in childhood is a comparatively mild disease. No toxic reactions due to the drug were observed. Though the best dosage can be determined only by much further study, it is suggested that the initial dose should be 40 mg. per kg. of body weight, followed by a total daily dosage of 35 mg. per kg. given in divided amounts at two-hourly intervals until obvious improvement in the general condition occurs. Thereafter 20 mg. per kg. of body weight should be given four-hourly till the thirteenth or fourteenth day after onset of the disease.

At present the effect of the drug on scrub typhus is being investigated in Malaya by an American team headed by Dr. J. E. Smadel, who is working in collaboration with Dr. Lewthwaite and Dr. Savoor at Kuala Lumpur. Preliminary results, which were announced at the International Congress of Tropical Medicine at Washington held in May of this year, are very encouraging. Twenty-five patients have so far received chloromycetin, and 12 patients from the same areas have been used as controls.

Among those treated none has died and no complications have developed. The duration of fever after the first dose averaged 31 hours and the whole febrile period 7.5 days. Among the untreated controls one died, and this patient and one other had serious complications; the mean duration of fever was 18.1 days. At first the same large doses were given as were thought to be necessary in louse-borne typhus, but gradually the dosage was reduced till only 6 g. was administered in 24 hours to the last seven patients. The results, however, were equally good. Half the patients were nursed under "bush" conditions in the hospitals attached to rubber estates. Further studies on the results of chloromycetin in rickettsial diseases will be awaited with great interest, for rickettsiae are resistant not only to the older chemotherapeutic arsenicals and antimonials but also to the sulphonamides and penicillin. Recent investigations by Smith and his colleagues[6] have shown that, though yeasts, fungi, protozoa, and viruses other than those of the psittacosis-lymphogranuloma group are unaffected, chloromycetin is active against a number of Gram-positive and Gram-negative bacteria, particularly Friedländer's bacillus, *Bacterium coli, Salmonella typhi, S. paratyphi, Shigella paradysenteriae* and *Haemophilus pertussis*. It is moderately active against various strains of tubercle bacilli. Bartz[7] has recently isolated chloromycetin in crystalline form. Its stability in solution is greater than

[1] *Science*, 1947, **106**, 417.
[2] Gottlieb, D., Bhattacharyya, P. K., Anderson, H. W., and Carter, H. E., *J. Bact.*, 1948, **55**, 409.
[3] *Science*, 1947, **106**, 418.
[4] *Proc. Soc. exp. Biol., N.Y.*, 1948, **68**, 9.
[5] Ibid., 1948, **68**, 12.
[6] *J. Bact.*, 1948, **55**, 425.
[7] *J. biol. Chem.*, 1948, **172**, 445.

that of penicillin and in the acid range greater than that of streptomycin. It can be heated to 100° C. for five hours without loss of activity. The solubility of the pure product in water is rather low, only 2.5 mg. per ml., but its solubility in pure propylene glycol is high. When given parenterally it causes considerable irritation, but as it is extremely active when taken by mouth this is not of great importance. Another antibiotic of the same type, auromycetin, has now been isolated; preliminary reports suggest that it, too, is active against rickettsiae.

FORMATION OF ADRENALINE AND HYPERTENSION

It is not yet known how adrenaline is formed in the body, but information is steadily accumulating. The general conception of the breakdown of amino-acids in the body was that they first lost their amino group in the process of oxidative deamination. In 1938 Holtz, Heise, and Lüdtke[1] found an enzyme in various tissues capable of removing the –COOH group from dihydroxyphenylalanine (dopa), and they suggested that such an enzyme might play a part in the general breakdown of amino-acids, which only lost the amine group after decarboxylation. Blaschko[2] showed, however, that the enzyme discovered by Holtz and his colleagues was specific for dopa, and other amino-acids were not decarboxylated; thus the process was evidently not a general one. The question then arose why dopa decarboxylase should exist, and Blaschko[3] suggested that it was probably concerned in the formation of adrenaline from tyrosine. The first change might be the introduction of a second phenolic hydroxyl group into the tyrosine molecule, thus forming dopa. Decarboxylation would then give hydroxytyramine, though whether the introduction of an –OH group into the side chain occurred before or after this decarboxylation there was at that time no means of knowing. Blaschko, however, showed that N-methyl dopa was not decarboxylated, and concluded that the primary amine noradrenaline must be formed as a preliminary to the formation of adrenaline itself.

The next step followed Holtz and Credner's[4] important observation that when dopa was given by intravenous injection or by mouth to rabbits a pressor substance appeared in the urine which they were able to identify chemically as hydroxytyramine. Thus they produced evidence of the normal activity in the body of the dopa decarboxylase. In the course of further work, Holtz, Credner, and Kroneberg[5] have shown that in normal urine there are pressor substances which are set free after acid hydrolysis, and they have produced pharmacological evidence which strongly suggests that these are a mixture of hydroxytyramine, noradrenaline, and adrenaline. They think that these substances may be produced in excess in the process of adrenaline formation, and that the body then gets rid of them in inactive forms which are excreted in the urine. They call the mixture urosympathin. They find that the amount of these substances in the urine is increased in healthy individuals after strenuous exercise, and also in patients suffering from essential hypertension. In normal individuals the amount of urosympathin excreted in 24 hours is equivalent to 2–3 mg. of hydroxytyramine, or to 0.1–0.15 mg. of adrenaline. In essential hypertension it is equivalent to 8 mg. of hydroxytyramine.

In a further paper Holtz and Credner[6] point out that renal ischaemia, by reducing the oxygen supply, will inactivate another enzyme which probably plays a part in removing substances like hydroxytyramine, which may be formed in excess. This is the enzyme amine oxidase, which converts hydroxytyramine to dihydroxyphenylacetaldehyde. The inactivation of amine oxidase will raise the amount of pressor amines in the blood. Loss of excretory power may have the same effect. Holtz and Credner administered 50 mg. of L-dopa intravenously to 14 patients with nephritis and high blood pressure and also to 8 healthy subjects; they tested the urine excreted in the following 2–4 hours for the presence of hydroxytyramine by its effect on the blood pressure of the cat. They found little or no hydroxytyramine in the urine of the patients with nephritis and high blood pressure, but considerable amounts in that of the normal subjects. They demonstrated that the absence of hydroxytyramine in the patients' urine was not due to failure to convert the dopa to hydroxytyramine, for they found no dopa in the urine when they tested it for the total amount of polyphenol compounds. Thus renal ischaemia may lead to over-production of pressor amines by inactivation of amine oxidase and also to their retention in the blood. It should be made clear that these observations are considered by the authors to represent a subsidiary cause of hypertension, of less importance than the action of renin on hypertensinogen.

It has been shown by Blaschko, Holton, and Sloane Stanley[7] that in the formation of adrenaline the introduction of the –OH group into the side chain must follow decarboxylation, since they have found that the carboxylic acid of noradrenaline is not decarboxylated in animal tissues. This agrees with Holtz's evidence that dopa gives rise in the body to hydroxytyramine. Finally, Holton's[8] recent observation that a suprarenal medullary tumour, taken from a patient who suffered from temporary crises of hypertension, contained about twice as much noradrenaline as adrenaline supports the view that the last stage of adrenaline formation is the N-methylation of noradrenaline.

[1] *Arch. exp. Path. Pharmak.*, 1938, **191**, 87.
[2] *J. Physiol.*, 1939, **96**, 50P.
[3] Ibid, 1942, **101**, 337.
[4] *Arch. exp. Path. Pharmak.*, 1942, **200**, 356.
[5] Ibid., 1947, **204**, 228.
[6] Ibid., 1947, **204**, 244.
[7] Communication to Biochemica lSociety, March 12, 1948.
[8] Communication to Physiological Society, May 21 ,1948.

END OF RADIUM COMMISSION

The affairs of the National Radium Trust and the Radium Commission are being wound up as a result of the coming into force of the National Health Act. The two bodies were established by royal charter issued under letters patent of July 25, 1929. The functions of the Trust were primarily to augment the supply of radium, and later, by supplemental charter, other radiotherapeutic apparatus, for use "in relation to the treatment of the sick in Great Britain" and for "the advancement of knowledge of the best methods of rendering such treatment." The main duty of the Commission was "to make arrangements for the proper custody, equitable distribution, and full use of the radium . . . of the Trust with the object of promoting the

treatment of the sick . . . and to make such arrangements for the supply on loan of the radium . . . as are necessary."

When the Commission began work it was generally admitted that radium treatment in this country had not attained the standard then reached by such centres as the Fondation Curie and the Radiumhemmet. During the last nineteen years, however, some of the National (University) Radium Centres set up by the Commission have achieved a reputation equal to the best anywhere in the world. At the same time the standard of radiotherapy in general has been raised by the policy of centralization pursued by the Commission. Hospitals with small radiotherapy departments have been advised to make agreements with a National Centre for the treatment of their patients, and the formation of small independent centres has been consistently discouraged. The cordial relations which exist between the Commission and the staff of treatment centres have been fostered by personal visits, and the Commission has built up a reputation for disinterested service and unbiased advice which has been of the greatest value in the treatment of cancer in this country.

The present health organization requires that the work hitherto done by the Trust and the Commission shall in future be undertaken partly by a Ministry of Health committee and partly by the regional hospital boards. It is deemed advisable therefore that the radium and other radioactive substances, apparatus, appliances, funds, and property belonging to the Trust and the Commission shall be dealt with by vesting them in the Minister of Health or the Secretary of State for Scotland. The royal charter and the three supplemental charters are to be surrendered.

SIXTY YEARS OF MEDICAL DEFENCE

Contrasted with the efficiency, stability, financial security —in a word, the success—of the three medical defence organizations as we know them to-day, it is surprising how fumbling was the approach to the problem only a little over sixty years ago. This history[1] of the Medical Defence Union, the pioneer society, by the secretary, Dr. Robert Forbes, shows that the early steps were faltering indeed; in fact, two or three times in the first three years the project seemed likely to come to grief. Curiously enough, the initiators of it were laymen, not members of our profession, though that is not to say that the early troubles were due to this cause. Dr. Forbes does well to recall, what few now remember, that the conception of a medical defence union arose out of a gross miscarriage of justice, recognized as such by the Home Secretary later on—namely, the conviction of a medical man who was sentenced to two years' imprisonment on a charge of attempted rape resting solely on the evidence of an insane person. About the same time two partners had to spend £1,000 in clearing themselves of an unfounded charge of negligence in a diphtheria case. These two cases aroused the profession, and the Medical Defence Union was the result. Two other cases (both mentioned by Dr. Forbes) had stimulating effects on the membership. The first of these was the celebrated Harnett case, where an ex-certified farmer brought an action for false imprisonment and was awarded fantastic damages, afterwards cancelled by a successful appeal; and the other was that of a country practitioner cast in heavy damages over a fractured femur, who would, so most people thought, have been exonerated if his defence had been conducted by a defence society. The *Lancet* raised a subscription to pay his expenses; but the editor afterwards announced that, since every practitioner could cover himself by joining a defence society, on no future occasion would he repeat his action. Probably those to whom the young Union owed the most were Lawson Tait and Victor Horsley, both men of domineering personality as well as brilliant professional achievement—and both difficult to work with; of their successors Sir Herbert Waterhouse and Eric Pearce Gould have been the most notable, men as likeable as the other two were the opposite. Considering that the election of Council members, theoretically a very democratic affair (as was to be expected in a constitution sponsored by Horsley), is in practice very largely oligarchic, it speaks well for the conscientiousness of successive Councils that nepotism has been conspicuously absent; there seems to be but one case where a son has succeeded a father (and in that instance greatly to the Union's advantage), though three brothers-in-law did also at various times serve as members. Dr. Forbes handles tactfully the secession which more than fifty years ago resulted in the formation of a rival organization, now the Medical Protection Society. This whole brochure is eminently readable and interesting throughout; it is to be issued to every member of the Union, now and for some few years to come. Nothing but good can come of the publication of this valuable history, which reflects credit both on the author and on the august society whose secretary he is.

[1] *Sixty Years of Medical Defence.* By Robert Forbes, M.B., Ch.B., J.P., Secretary of the Medical Defence Union. (Pp. 92. No price.) London: Medical Defence Union, Ltd. 1948.

LOCATION OF DISK LESIONS

Two difficulties have complicated the diagnosis and treatment of intervertebral disk lesions; the way in which symptoms are produced is not exactly known, and common variations in the lumbar plexus hinder accurate location of lesions by clinical neurology. Herniation of the nucleus pulposus may be regarded initially as a joint lesion. As such it can cause painful spasm in the lumbar muscles, postural changes, and secondary stresses in neighbouring ligaments. Removal of the displaced disk cannot restore the joint to normal, and this may explain the persistence of symptoms such as low backache after apparently successful operation. It may be that this joint derangement can itself give rise to deep referred pain throughout the corresponding sclerotome in the leg, even in the early stages before nerve roots are involved or localizing neurological signs develop. The experimental and operative studies of Falconer, McGeorge, and Begg,[1] however, show that severe limb pain in disk prolapse is mainly due to impingement of the displaced disk upon a nerve root. It is probable that the pain is produced by angulation and compression of the nerve root rather than by simple stretching. During laminectomy such distortion of the nerve over the protruded disk could be clearly seen when the straight leg was raised to an angle which normally induced limb pain. In patients who recovered after conservative treatment Falconer and his colleagues demonstrated by contrast myelography that the protrusion persisted unchanged. They therefore attributed recovery to spontaneous lengthening of the nerve trunk such as has been observed experimentally in animals, an observation which should encourage those who believe in persistence with conservative methods.

In the lumbar region lateral protrusion of the disk tends to involve the spinal root corresponding to the next segment caudally. Thus, a lesion at the level of the lumbo-sacral joint affects the first sacral nerve, with production of deep pain throughout this sclerotome, the correspondence of which to the course of the sciatic nerve formerly gave rise to the belief that the syndrome was due to sciatic

[1] *J. Neurol. Neurosurg. Psychiat.*, 1948, **11**, 13.
[2] *J. Bone Jt Surg.*, 1944, **26**, 238.
[3] *Arch. Surg., Chicago*, 1948, **55**, 246.

neuritis. Severe deep pain, muscle spasm, and backache are the dominant symptoms, but on careful questioning a patient will often describe a tingling, "pins-and-needles" sensation, alternating with periods of numbness and felt in the dermatome of the affected root. In such cases it is frequently possible to find small areas of impaired skin sensation. The similarity of these signs to those produced by experimental nerve compression suggests that they result from intermittent direct pressure on the nerve.

Keegan,[2 3] who has collected an imposing series of cases of disk prolapse confirmed in many cases by operation, uses the discovery of such hypoalgesic areas of skin to locate disk protrusions. He rejects the view that impairment of sensation does not follow lesions involving a single root, and he does not accept the acknowledged variability of the lumbar plexus as a serious difficulty. His anatomical studies indicate that "there is no change of position of the nerve roots with addition or reduction of lumbar vertebrae in man if the vertebrae are counted in numerical sequence and not by an arbitrary lumbar series defined by a quite variable first sacral segment and last rib." Further he asserts that the separation or fusion into plexuses is a secondary arrangement which does not alter the ultimate root distribution to the skin. He therefore claims to be able to locate the level of a disk lesion by reference to the dermatome charts constructed on the basis of his observations. Anatomists in general may not accept these views, but the chief criticism of this approach is that it neglects the factor of ascending oedema, which may involve several roots and, in the cervical region, the cord itself. Nevertheless Keegan is right to stress the importance of accurate clinical assessment of each case, and his work should discourage immediate resort to laminectomy following a typical history and a cursory neurological examination.

INCLUSION BODIES OF THE ERYTHROCYTE

The eponymous inclusion bodies of the erythrocyte make a formidable list. To those of Maragliano, Howell, Jolly, Cabot, Isaacs, Heinz, and Ehrlich have recently been added the Pappenheimer bodies, and a reawakening of interest in the whole subject of erythrocytic inclusions is now evident. In 1941 Grüneberg,[1] using the prussian-blue reaction, had found siderotic granules in the erythrocytes of man, the rat, and the "curly tailed" mouse. He was later able to demonstrate these siderocytes in increased numbers after splenectomy and in cases of chronic uraemia.[2] Case,[3] employing a more delicate staining method with $\alpha\alpha'$ dipyridyl and potassium thiocyanate, showed that siderocytosis was related to haemolysis, though not to reticulocytosis. Case[4] and Granick[5] both believed siderocytes to be ageing corpuscles, but Grüneberg regarded their appearance as evidence of abnormal iron metabolism, and suggested that the siderotic material contained iron which had not been used for haemoglobin synthesis.

In 1945 Pappenheimer, Thompson, Parker, and Smith[6] reported another form of erythrocytic inclusion body which they saw in three cases of unexplained haemolytic anaemia following splenectomy. There were as many as 20 of these coccoid or rod-shaped bodies within a single erythrocyte. They gave a positive iron-reaction but did not stain by Feulgen's method. The authors concluded that although they could not be identified with any known parasite they might be of such nature, or they might be identical with Grüneberg's siderotic granules. The problem of these Pappenheimer bodies has been studied by McFadzean and Davis.[7] They found them in a variety of haemopoietic disorders, but only in small numbers, except in acquired haemolytic anaemia. In eight patients with this disease Pappenheimer bodies were found in the peripheral blood and in the sternal marrow. Before splenectomy they tended to be scanty in the former and numerous in the latter; after splenectomy the number of affected erythrocytes in the peripheral blood rose sharply, in one instance from 3% to 88%, and in another from 11% to 82%. McFadzean and Davis believe that Pappenheimer bodies appear as a consequence of abnormal haemoglobin synthesis. From their observations of the flooding of the peripheral blood after splenectomy with cells containing these bodies they suggest that depraved erythropoiesis, resulting in cells doomed to early elimination by the spleen, may be the cause of haemolytic anaemia of this type. They are convinced that the siderotic granules of Grüneberg are different from the Pappenheimer bodies, and point out that Case regarded the former as a sign of age in a corpuscle, while the latter could be seen in reticulocytes and even in the nucleated precursors of erythrocytes. They have collected some evidence which suggests that the granules of basophilic stippling due to lead poisoning are similar to Pappenheimer bodies.

Less common, but with a longer history, are the Heinz–Ehrlich bodies first seen by Heinz[8] in 1890 in the erythrocytes of rabbits poisoned with phenylhydrazine. They stain poorly with Romanowsky stains, but readily by supravital methods; they give no iron-reaction. From time to time there have been reports of patients with anaemia whose erythrocytes contained these bodies. Fertman and Doan[9] have recently recorded the case of a 71-year-old physician who had taken 500 quarter-grain tablets of erythrol tetranitrate during the course of a year for angina pectoris and was admitted to hospital with a haemolytic anaemia. Inclusion bodies of the Heinz–Ehrlich type were found in up to 16% of his erythrocytes. The anaemia was unrelieved by iron, liver, or blood transfusions. Heinz–Ehrlich bodies, unlike the Pappenheimer bodies, were rarely seen in erythroblasts; this conforms with Figge's[10] view that the former are probably globules of denatured haemoglobin. His opinion is endorsed by Gajdos and Tiprez,[11] who have shown that their appearance depends on the scission of the porphyrin ring in haemoglobin to form verdohaemochromogen, an early step in the degradation to bilirubin.

Although these three types of inclusion do not appear to be identical, they are all commonly associated with a haemolytic anaemia and indicate some disturbance of haemoglobin metabolism. The Pappenheimer body signifies defective haemoglobin synthesis, the Heinz–Ehrlich body precocious degradation; while the implication of the siderotic granules of Grüneberg is as yet uncertain. All are found in pathological erythrocytes, and the segregation and destruction of such cells by the spleen may be the basis of the haemolytic anaemia which marks their presence.

THE HALF-YEARLY INDEXES

The half-yearly indexes to Vol. II of the *Journal* and the *Supplement* for 1947 have been printed. They will, however, not be issued with all copies of the *Journal* but only to those readers who ask for them. Any member or subscriber who wishes to have one or both of the indexes can obtain what he wants, post free, by sending a postcard to the Accountant, B.M.A. House, Tavistock Square, London, W.C.1. Those wishing to receive the indexes regularly as published should intimate this.

[1] *Nature*, 1941, **148**, 114.
[2] Doniach, I., Gruneberg, H., and Pearson, J. E. G., *J. Path. Bact.*, 1943, **55**, 23.
[3] Ibid., 1945, **57**, 271.
[4] *Nature*, 1943, **152**, 599.
[5] *Proc. Soc. exp. Biol., N.Y.*, 1943, **53**, 255.
[6] *Quart. J. Med.*, 1945, n.s. **14**, 75.
[7] *Glasg. med. J.*, 1947, **28**, 237.
[8] *Virchows Arch.*, 1890, **122**, 112.
[9] *Blood*, 1948, **3**, 349.
[10] *Anat. Rec.*, 1946, **94**, 461.
[11] *Sang*, 1947, **18**, 35.

MENTAL HYGIENE AND WORLD PEACE

Opening of International Assembly

Following the two specialist international conferences, the International Conference on Mental Hygiene was opened at Westminster Central Hall on Monday, Aug. 16. About fifty nations were again represented among the delegates, and the opening ceremony was attended by leading representatives of medicine, public health, psychological science, and social administration. A message was read from the King in which he expressed himself as confident that the Conference and the work done in preparation for it would "contribute to a better understanding of troubled communities and a convalescent world." In a loyal reply it was stated: "Your Majesties' demonstration of what happy family life can mean to mental health is in itself a source of inspiration."

Dr. J. R. REES, President of the Conference, referred to the vast amount of preparatory work which had been carried out. Discussion groups had been working in 27 countries over a period of many months, and for a fortnight before the Conference met a Preparatory Commission had been preparing a statement as a basis for consideration. Dr. Rees wondered whether there were many other instances in which a document covering so large a field had been produced by agreement between scientists and sociologists of ten countries and of eight different professions.

VISCOUNT ADDISON, Lord Privy Seal, who welcomed the Conference in the absence on holiday of the Minister of Health, recalled that when it was decided thirty years ago to set up a Ministry the conception of health which was accepted was the same as that which now appeared in the constitution of the World Health Organization, namely, "Health is a state of complete physical, mental, and social wellbeing, and not simply the absence of disease or infirmity." Harassing conditions of life, Lord Addison continued, by imposing continual anxiety on men and women, especially women in the home, provoked many of the conditions which led to physical or mental ill-health, but at the same time he had come across a large number of discontented people who were not in the worldly sense hard up, and he had often wondered what caused their anxieties. He thought that first and foremost it was because they lacked the right attitude to occupation. A satisfactory occupation had much to do with a state of mental restfulness. One of the biggest questions before the world to-day was whether people were prepared to face the responsibility for the vast forces which physical science had put into their hands. Wars began in the minds of men, and it was in the minds of men that the defences of peace must be constructed.

Mr. R. A. BUTLER, M.P., president of the National Association for Mental Health, joined in the welcome. What agencies, he asked, were more important than those which contributed to the expansion of the social sciences, and in particular attempted to explore and chart the puzzling wilderness of the brain? He said "wilderness" because he was convinced that there was relatively more unknown territory to explore in the mind of man than remained undiscovered on the terrestrial globe. A world-famous brain-specialist in Canada recently remarked to him that there were ahead a hundred years or more of patient exploration of the normally unused recesses of the brain. Here was work for the Columbus or Magellan in their ranks. Mental health investigation called for team work and pooling of ideas. He had great hopes of the results of the present gathering because it represented every profession concerned with mental health; he trusted that its conclusions would be a spur and stimulus to mental-health workers all over the world and through them to their associates, the administrators, diplomats, and politicians.

To emphasize the world-wide character of the Conference, brief messages were given by representatives of six continents. For North America Dr. FREMONT-SMITH, vice-president for the United States of the International Committee for Mental Hygiene, said that, just as physicists, chemists, engineers, and others needed to collaborate in the work on atomic energy, so must they, the specialists in individual and group behaviour, join forces to construct a different kind of cyclotron, one which would use the powerful rays of human intelligence to untap the energies of good will and co-operative effort in the heart of man.

For South America Professor HENRIQUES ROXO, of the Psychiatric Clinic in the University of Brazil, said that it was for the Conference to interpret the reasons for what was now occurring in the world. If there should be mental illness it must do its best to cure it; if only symptoms of maladjustment, it must indicate ways of reconditioning. For Asia Dr. K. R. MASANI, president of the Indian Council for Mental Hygiene, suggested that some clear-cut recommendations should go from the Conference to the World Health Organization and to Unesco.

For Africa Dr. LOUIS VAN SCHALKWIJK spoke of the social work proceeding in the Union of South Africa, a country which, he said, was "mental-health conscious." Dr. HENRY MAUDSLEY, of Melbourne, brought the greetings of Australasia; and, finally, for Europe, Dr. ANDRÉ REPOND, of the Swiss National Committee for Mental Hygiene, drew an analogy from the way in which the people in his own country dealt with avalanches, not by erecting barriers at the foot of the mountain, but at the top of the slope where the snow first settled. It was in the realm of ideas before they became action that catastrophe could be prevented.

The Conference and the World Health Organization

The good wishes of the first World Health Assembly meeting in Geneva were brought by Dr. G. BROCK CHISHOLM, director-general of WHO. He pointed out that Governments in their international relationships could not be much more tolerant, co-operative, or helpful than the mass of the people who put them in power. Not too much was to be expected from Governments until people everywhere became more world-minded and emotionally capable of functioning as world citizens. He hoped that a World Federation for Mental Health would play a significant part in helping the world to learn to live in peace.

Dr. ARVID BRODERSEN, representing Unesco, mentioned the co-operation between his organization and specialists in mental health, including national and international organizations.

These complimentary proceedings over, the Conference settled down to its discussions, the theme for the week being mental health and world citizenship. Professor RENÉ SAND, professor of social medicine, University of Brussels, took the chair during the first discussion, when problems of world citizenship and good group relations came forward. Professor Sand remarked that it was fitting to be meeting in the year which marked the centenary of the Public Health Act in England, and this was a welcome opportunity to acclaim Edwin Chadwick, Southwood Smith, and others to whom the passing of that Act was due. By a coincidence it was also a hundred years ago that the expression "social medicine" was coined by a French medical journalist, Jules Guérin, in the *Gazette Médicale de Paris*. It was also fitting to be meeting in historic Westminster, close to the Houses of Parliament, that substantial bulwark of freedom and progress, opposite the Abbey, the shrine of the men who had served both England and mankind, and in the very hall in which the first assembly of United Nations had met.

A somewhat diffuse discussion was opened by Professor CARL BINGER, of Cornell, who spoke of the need for finding moral equivalents for war, and also the need to know more about the transmission of war fever, how the infection spread, and why it was no longer a localized outbreak but so quickly reached epidemic or global proportions. Delegates from Switzerland, France, Greece, Norway, Iran, and Czechoslovakia addressed the Conference, and Dr. EDWARD GLOVER, who presided over this part of the meeting, summed up. He said that the work of the preparatory groups, although they had been functioning only for a year or so, had resulted in a nucleus organization in many countries, and had shown that everywhere there were people who were prepared to get down to the necessary committees on the subject of mental health. This work must be continued. He spoke of the need, particularly on this topic of world citizenship, of making use of the disciplined exercise of the imagination.

In the evening a reception was given by H.M. Government when Lord Addison received the guests.

INTERNATIONAL CONGRESS ON MENTAL HEALTH

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Third Day

Psychiatric Problems in Education

The morning session of Aug. 13 was devoted to the topic of psychiatric problems in the educational sphere, and the chair was shared by Dr. B. Behman (Egypt) and Dr. S. Ahnsjo (Sweden). The subject was introduced by Dr. Jeanne Decroly (Belgium), who, while admitting that the school was in many instances a contributory cause of aggressive behaviour, considered that by careful attention to compatibilities as between teacher and pupil and between pupils themselves the school atmosphere could create an environment favourable to the improvement of even the gravest forms of aggression.

Dr. Gordon Stephens, out of his experience as psychiatric consultant to the Winnipeg Child Guidance Clinic, set out a number of school influences which imposed undue restrictions upon healthy expression in the majority of children. One of these was a curriculum over-stuffed with rigid, unrealistic subjects, tolerable only to an abnormally submissive child. Frustrations arising in the class-room with more than thirty children and an average teacher were obvious. Another severe source of frustration for at least half the average class was the measurement of academic achievement by examinations. Then there was the frustration due to restricted outlets for recreation, which produced irritability, restlessness, and impaired performance. He included among his unfortunate influences the preponderance of female teachers. In the Winnipeg school system there were three times as many female teachers as male, and several thousand boys had no male teacher until they were twelve or thirteen. Many of the women teachers, though by no means all, were a source of frustration to their pupils. But the most traumatic and crucial frustration which the child encountered in his school life was poor teacher–pupil relationship. "Too many teachers seem to choose their profession as an escape from the aggressive and more mature adult environment." Dr. Stephens added that the same was said about some psychiatrists and social workers.

Finally Dr. Lucien Bovet (Switzerland) spoke of the complementary (and in both cases limited) tasks of the physician and the educationist, the latter taking over at the point where the former left off. He begged the Congress to pass a recommendation that the training of doctors should include a training in experimental medical psychology and child psychiatry, that the training of educators should include training in psychopathology in so far as it related to the child and the adolescent, that medico-pedagogic services should be created to help in the diagnosis, therapeutics, and prophylaxis of the troubles in the development of the child and the adolescent, and that a body of psychiatrists should be attached to the schools in the same way as school nurses.

In some general discussion Dr. Lauretta Bender (United States) described work among problem children in New York who had been brought up in institutions and deprived of the mother relationship so that they had become virtually ineducable, unable to identify with their teachers and schoolfellows in a group programme. Dr. Antoine Pierson (Morocco) reminded the Congress of children in North Africa, products of an ancient civilization, in which the ordinary father–mother–child relationship did not hold, the child finding himself in a family of many mothers, and receiving no particular individual attention. The idea of personality in such children emerged much later. Mrs. Lloyd Noad (Australia) suggested that the nursery school was the place in which "to begin to outlaw war." Dr. Alice-Marie Laporte (Belgium) described the lot of many Continental children who during the occupation had lived in a state of alternate exhilaration and fear which was highly detrimental. Various factors, such as insufficient housing and the black market, had contributed to further character degeneration. Moreover, teachers were apt to be neurotic, they were overworked, and owing to war circumstances many of them remained unmarried, so that their affective life was entirely dependent on the children. Every school should be provided with a trained psychiatric social worker. Dr. G. van Loon (Holland) gave an account of Dutch children who had lived in the worst imaginable conditions during the war. In a group of 540 such children, however, who had been orphaned and placed with foster parents, 90% got on well with them, and the frequency of aggressive and anxiety phenomena was only about 5%. The discussion was concluded by Dr. Rene Dellaert (Belgium) and Dr. Anna Maenchen (United States), the latter remarking that psychologists too often dwelt in an ivory tower, and, seeing the problem of each child one by one in the luxury of the private interview, did not appreciate the influence of its surroundings upon the child's behaviour pattern.

Collective Guilt

The subject of guilt, which had already occupied two sessions, was carried to a higher level in a discussion on collective guilt. The distinguished American anthropologist, Margaret Mead, introduced the subject from the standpoint of a comparative study of cultures. She referred in particular to the culture of the North American Indians and the less-known cultures of South America, which were based on shame as a sanction—that is to say, the child internalized, not fear of loss of love or of punishment from its parents, but fear of disapproval by the whole of its group. In later life the individual conformed in shame, and the shame remained an external sanction in which the chief effort was to avoid exposure to open ridicule and opprobrium. She outlined some other types of sanctions which were found in different cultures of the world, and on the basis of comparative cultural data she came to the conclusion that the capacity to experience guilt as a dominant psychological mechanism was a human capacity which might be either developed or neglected by any given society and could not therefore be regarded as either universal or necessary, however desirable it might be found in terms of contemporary ethics.

Dr. Poul Bjerre (Sweden) contested the proposition that aggression, like sexuality, was an instinct inherent in the nature of mankind. If it were, he said, war could never be abolished. All talk of sublimation would be empty talk, for no instinct could be satisfied except directly through its own channels. One might divert the attention from hunger by reading poetry, but it was impossible to satisfy thereby the need for food. Sooner or later, if aggression was an instinct, it would find an outlet in war. But in his view it was impossible to regard aggression as an elementary instinct; it was a reaction to inhibitions, neither more nor less.

Dr. Krijgers-Janzen (Holland) read a paper in which he compared collective guilt with individual guilt from the standpoint of developed psychology, and Dr. H. V. Dicks (Great Britain) entered upon an interesting analysis of the culture of pre-war Germany, with the authority of the father-figure resulting in a rigidly ordered society with a high degree of subordination linked to dread of social change. A highly theoretical discussion was continued by Dr. Kate Frankenthal (U.S.A.), Professor G. Bosche (Italy), Dr. Clifford Scott (Great Britain), Dr. F. Grewel (Holland), and Dr. Choisy-Clouzet (France).

Fourth Day

The Child Delinquent

The final session of the International Congress on Child Psychiatry, on the morning of Aug. 14, considered the problem of the child delinquent. The chairmen were Dr. Carl Frankenstein (Palestine) and Dr. Kata Levy (Hungary). Three opening papers were read. Professor de Sanctis (Rome) expressed the point of view of the Italian school, and emphasized the importance of religious education. There was no cleavage between medicine and religion which could not be bridged. Dr. Jean Dublineau (Paris) discussed the framework of re-education and Dr. G. E. Gardner (Boston, U.S.A.) the expressions of sexual instinct in childhood which led to sex delinquency, with particular reference to the role of aggression in such acts.

Dr. J. D. W. Pearce (Great Britain) thought that too little attention had been paid in discussions on this subject to individual differences in native endowment as between one individual and another. Dr. George Heuyer (France) astonished the Conference by calling for the abolition of all juvenile courts and judges. Delinquent children, he said, should not be

dependent upon the administration of justice but should be dealt with by some other department which did not import a legal or penitentiary aspect. Dr. FRANK BODMAN (Great Britain) mentioned the factor of social backwardness or defectiveness, as distinct from mental defect, as important to bear in mind in these cases. Dr. KLINSBERG (U.S.A.), in pointing out that criminality or delinquency varied from community to community and from period to period, amused the conference by the story of a man in the prohibition era who offended against the law, but before his trial the law was altered. He was, however, fined for breaking the law as it had then stood, and promptly entered the previously illegal employment of brewing in order to pay the fine. Dr. G. K. STURUP (Denmark) spoke of the desirability that communities in which aggressive children were brought up should be small. It was hopeless to make a home out of a group of thirty children. Group co-operation in adults as well as in children was impossible above a certain number. Others who took part in the discussion were Dr. KAISA LEPPO (Finland), Dr. J. ROUDINESCO (France), Dr. LUSCIONI (Algeria), and Dr. O. FLEISCHMANN (Austria).

This brought to a close the International Conference on Child Psychiatry, and Dr. J. R. REES, the president, announced that it had been decided that the Comité International de Psychiatrie Infantile should be reconstituted as the International Association, with one representative from each country on its council. Dr. Frederick Allen, of Philadelphia, had been elected the first president of the new body, and an invitation to hold the next International Conference in Philadelphia had been received.

ADVANCES IN GROUP THERAPY

The closing session of the International Conference on Medical Psychotherapy was concerned with advances in group and individual treatment. Professor O. KAUDERS (Vienna) and, later, Dr. W. REES THOMAS presided. Criticism of the group method was made by Dr. C. A. MEIER (Zurich). In Switzerland nobody was practising anything like group therapy, but then Switzerland had not had to cope with war neuroses and psychoses. Group therapy was said to be gaining ground in England and America—a discomforting thought, for it looked as if it was becoming a fashion. If it had arisen only as a war necessity it should by now have been losing ground. It was a makeshift substitute for individual therapy when the latter was too expensive in money for the patient and in time for the overworked analyst. Grouping was a collective situation; it sacrificed the personal *vis-à-vis*; it could be only palliative and in the long run create a vacuum. One effect of group therapy was claimed as an advantage—namely, that it diminished the resistance of the patient—but this, Dr. Meier argued, was no real gain, for resistance might be a protective system against complete breakdown.

"Brief psychotherapy" was described by Dr. W. B. TERHUNE (U.S.A.). This, he said, was a practical form of individual psychotherapy which chose the best methods from all schools. Most of the patients so treated were fundamentally and permanently helped. Two years was the minimum time required for the training of a psychiatrist in the basic technique of brief intensive psychotherapy. The method employed the recognized processes of abreaction. It was largely dependent for its results on quick, strong, and successful transference. The patient was subjected to the treatment for from three to eight weeks. It could be used successfully in an out-patient clinic.

Dr. W. R. BION followed with an exposition of group therapy as practised at the Tavistock Clinic. In psycho-analysis the most important condition was "one patient, one doctor." He had had it in mind, however, to elaborate a form of treatment for the proper carrying out of which a group would be as essential as the intimate relationship between two individuals in psycho-analysis; in other words, any form of treatment in which the psychiatrist felt that he had a group of patients *faute de mieux* was bad treatment, whereas any form of treatment, supposing it could be worked out, for which a group was essential would be good treatment. After describing his methods he said that, while most of the patients who had claimed to be better did not approach any standard he would have regarded as satisfactory in individual treatment, nevertheless there was an element of improvement which was stable and genuine.

Another exponent of American methods, Dr. DANIEL BLAIN, said that group therapy had been practised in America for many years, but there was a rapid expansion of the method during the war. At first it was considered purely a method of convenience in view of the shortage of psychiatric manpower, but now it was believed that there was something in it over and above individual psychotherapy, and that in its exercise just as much skill, though perhaps of a different kind, was required. The evidence that it produced results of value was subjective at present, but it was just as good as the evidence of most people reporting their work in individual psychiatry, because that also had not been submitted to any scientific valuation or objective control.

This and other recent developments in applied medical psychology were reviewed by Dr. E. B. STRAUSS (London). Such methods had come about, he said, as the result of a long-felt demand for effective short cuts in order to cope with the increasing number of patients who needed psychiatric help. The new methods included narco-analysis, abreactive psychotherapy, group therapy, and therapeutic social clubs. Although group psychotherapy originated in the United States, British psychiatrists had carried the application of the principles much further than was common in American practice. The form was most diffuse in the therapeutic social club and most compact in the closed analytical group. Many therapeutic social clubs had been started in Great Britain, both inside mental hospitals and in connexion with psychiatric out-patient departments. The group situation, with its opportunity of transference reactions, forced the patient out of his isolation by bringing him into vivid contact with the social situation and causing him to see his own anxieties and morbid ideas mirrored in other members of the group. Resistance was broken down and dynamic unconscious material more readily activated.

Two American psychiatrists spoke further on the subject. Dr. JEROME FRANK said that in his clinic psychotics had been receiving group treatment only; neurotics received both group and individual treatment. The groups were small, ranging from five to ten members. Group therapy was a valuable adjunct to individual treatment, and for many patients it took its place. Dr. S. R. SLAVSON pointed out that if one error was made in selecting a patient for the group there was no psychotherapy, but only confusion and exhaustion for the therapist. But, given the right selection, there was a large field for group treatment. The great thing was to choose patients who were similar not in their symptoms but in their psychodynamic syndrome. Psychiatrists had made the mistake of choosing patients on the basis of symptoms, whereas similar symptoms might derive from very different causes.

Dr. JOHN RICKMAN (London) said that no doubt in some cases it was an advantage for treatment to be brief, but brevity in this field was not the way to knowledge. One pace which could not be accelerated was the pace at which human problems could be understood. It led to sheer confusion to speak about brief therapy and group therapy as though they were the same thing.

Other speakers on this subject were Dr. ANGELO (Italy), Dr. C. JORGENSEN, who gave an account of group therapy as practised in the municipal hospital at Copenhagen, and Dr. A. M. ALONSO (Venezuela). The final speaker was Dr. KEMPER (Berlin), who described the experiences of a large clinic where psychiatric treatment of up to 150 hours in an individual case was given. The staff included followers of the Freudian theory, but representatives of other schools as well. He agreed that major analysis could not be replaced by any brief treatment. The decisive condition in brief therapy was the correct choice of patient. The method was justified in one case and not in another; it was neither a substitute for nor a branch of analysis.

The International Conference of Medical Psychotherapy closed with warm expressions of appreciation from the delegates from abroad for the work of British organizers.

On the intervening Sunday special services were held at St. Paul's Cathedral and the Central Hall, Westminster, and at Westminster Cathedral there was a solemn High Mass for members of the Congress. At St. Paul's the preacher was Dr. Donegan, the Bishop Suffragan of New York, and Mr. R. A. Butler, M.P., read the lesson.

PSYCHOSOMATIC MEDICINE

Widening Concepts

The meetings of the International Conference on Mental Hygiene, the third of the assemblies of the Mental Health Congress, continued at Westminster during the whole of last week with eagerly sustained discussions on individual, family, and industrial relations. On two afternoons nine specialist meetings were held. At one of these, under the auspices of the Royal Medico-Psychological Association and the chairmanship of Dr. W. REES THOMAS, a discussion took place on the widening concept of psychosomatic medicine.

This subject, in particular relation to public health, was introduced by Dr. J. L. HALLIDAY, who pointed out that the physical health of a nation could be assessed from its mortality rates, the incidence of infectious diseases, and so on, but for its social health it was necessary to know not only the occurrence of neurotic and psychotic manifestations but the fertility, the incidence of delinquency, and many other phenomena—economic, industrial, and cultural. Thus it was possible for the wartime paradox to occur, when the physical health of the population improved while its social health declined.

For the improvement of the psycho-social health of a community certain social patterns had to be altered. Dr. Halliday mentioned some of the changes in social pattern which had occurred during the three years since the end of the war, and showed how in each instance there was a balancing of factors. There had been full employment, but along with that a certain rigidity in card-indexing and labelling of workers. There had been Government grants for higher education—an excellent policy, but its emphasis on the training of technicians tended to turn some universities into technical colleges. The advent of a State medical service would bring much social good, but also, if care were not taken, certain social evils—one being that creative ideas in the field of medicine might be discouraged and prevented. The nationalization of industries had taken place, but associated with it an increase in bureaucracy. The question was whether on balance these measures were lessening the causes of social sickness. The indices of psycho-social disorders which would give an answer were not available. There was, of course, the favourable employment index and a rise in the birth rate, but a rise in the birth rate had followed the earlier war and had proved to be transitory. One favourable figure was the post-war decline in the death rate from peptic ulcer, which had risen steadily between the wars. The incidence of exophthalmic goitre and of diabetes was less, and the improvement in the latter disease was not wholly explainable by sugar rationing. Suicide, again, was declining. All this seemed to argue a loosening of obnoxious social pressure of some kind, but until there were adequate morbidity statistics such a conclusion should be accepted with reserve.

The Social and Psychological Background

Dr. ERIC WITTKOWER dealt with some common conditions from a psychosomatic point of view. It had been observed that patients with venereal diseases frequently came from broken homes. Of female patients in one recorded observation 80% had unresolved conflicts concerning their family. All observers agreed that delinquency and criminality were common in patients with V.D. The all-round picture was that such patients were emotional and sexually and socially immature, though physically and mentally they might have reached full maturity. The evidence of immaturity was most striking in the habitually promiscuous. War experience had been instructive in revealing the background of venereal disease. The bond of marriage in newly wedded couples might not be strong enough to withstand the disuniting effect of long separation. Men in the Services lived in a regimented community abroad or in isolated posts, and boredom was conducive to promiscuity.

Turning to tuberculosis, Dr. Wittkower said that many individuals who developed this disease seemed to have in common an inability to deal adequately with aggressive impulses and were prone for varying reasons and in different ways to turn these impulses against themselves. Illness and disablement in general had a regressive effect on the ill person, showing itself in hypochondriacal tendencies, surrender to despondency, and a bland, childlike faith in the powers, indeed the infallibility, of the doctor.

Generally speaking there was no justification for feeling guilty of being ill, but a person who felt guilty revealed by so doing that he was aware of an aggressive aim and purpose in his illness. Chronic illness almost invariably mobilized aggressiveness, finding expression in irritability and outbreaks of temper. To many persons illness was equivalent to weakness and failure. Patients not infrequently felt ashamed of being ill, especially if the disease was one to which a stigma attached. The disproportionate emotional reaction to minor acts of kindness which was found quite commonly in the chronic sick could only be understood on the basis of assumption that they did not believe they deserved them.

Dr. Wittkower also spoke of the emotional reactions attending loss of sight or the amputation of a limb. He said that the general belief that blinded persons were meek was mostly erroneous. Their dependence on sighted people and their need for affection compelled them to check aggressive traits or show them only in sarcastic wit and fantasy. Men who lost an arm had more severe emotional reactions than those who had had a leg amputated. There were various reasons for this, the arm being more important for social relations, self-expression, and occupation, while its relative nearness to the heart made the loss of it seem a greater threat to life.

Dr. J. C. AUERBACH (United States) urged that a halt should be called at the point where they could still speak of medicine, otherwise they would be "swallowing a bigger bite than they were able to digest." He thought that the term psychosomatic disease" should be restricted to conditions in which the psychological disorder, occasioned perhaps by the disease or injury, itself reacted again upon the body. Dr. G. H. DAY, speaking from his experience of pulmonary tuberculosis, said that many of the patients were subject to conflicts. If the conflict, whether external or internal, was resolved they got well; if the external conflict (inability to get on in the social setting) was insoluble they lapsed into chronic invalidism, and where there was an insoluble internal conflict the illness might well prove fatal.

Dr. RONALD MARKILLIE asked about the connexion between responsiveness to emotional factors and proneness to catch infection in an epidemic. On the question of suicide he suggested that some people died not by actually taking their own lives but as the result of a depressive process similar to that which operated in the mind of the suicide, so that though they might be expected to commit suicide they did not do so, and yet they destroyed themselves by the precipitation of some grave disorder.

Family Problems and Psychological Disturbance

In the plenary session devoted to family problems the opener of the discussion was Dr. P. J. REITER, president of the Danish Association for Mental Hygiene. The disorganization and disintegration of the family institution, he said, was demonstrated by the increasing number of divorces. He was not prepared to say that matrimony at any cost ought to be preserved. Divorce might be preferable to continuing disharmony. But the important thing was a systematic and careful education of young people to a better understanding of the emotional, personal, and social aspects of matrimony. Another problem was "extra-matrimonial births." This was not to be solved merely by counteracting conventional prejudices against the unmarried mother. The psychological effect went deeper. The illegitimate child during adolescence would miss the father-figure, while the mother-figure was likely to be defective in certain ways—bitter, disillusioned, severe, over-critical, over-anxious. The only child, again, was missing to a high degree the normal social microcosm, and was specially exposed to difficulties in dealing with the Oedipus situation. Difficulties of a similar character arose in families in which the children were spaced out at very long intervals.

Dr. LESLIE HOUSDEN urged that a real attempt should be made in all countries to raise the standard of parentcraft. We poured out treasure and effort in trying to restore mental health to one generation while our homes manufactured casualties for the next. The Ministry of Health had appointed an adviser in parentcraft—the first such appointment in this country, and he did not know of a similar one elsewhere.

The work of the Marriage Guidance Council was described by Dr. EDWARD GRIFFITH. It co-operated harmoniously, he said, with churchmen, doctors, and educationists. The need for such work was obvious. Marriage disharmony was increasing in practically every country. Sex relationships before marriage were on the increase. One in four of all women who married for the first time was pregnant before marriage. The rates of illegitimacy, abortion, and venereal disease were going up. The 500 divorces in this country in 1900 had become, probably, 50,000 this year. The causes of all this were widespread—economic insecurity, materialism, the changing social pattern, combined with a lack of creative outlet and ignorance of the biological, psychological, and spiritual factors in personal relationships. The first cure for marriage disharmony lay in effective and widespread pre-marital education. Adequate marriage preparation would go far to remove frustration, fear, and anxiety, such as dominated so many marriages and destroyed family life.

The religious ideal was put forward by at least two speakers. The Rev. ROBERT MORRIS (U.S.A.) mentioned that in a community church in Ohio, where particular care was taken in the nurture and instruction of young people in respect of sex and marriage, 643 men went into the armed Forces and not one of them was discharged on account of any neurotic or psychoneurotic disorder. This result had been obtained by combining the principles of mental health with a wholesome faith. He also mentioned that this summer in the United States 145 theological students were taking a clinical course in hospitals in order to get to know people and their difficulties. Dr. PATRICK MORAN (Eire) also emphasized the religious factor. There was no synthetic substitute, he said, for a wholesome family life.

Medical Leadership in Industrial Relations

The session of the Congress which was most sparsely attended was the one concerned with mental health in industry and industrial relations, and fewer papers had been contributed to the Preparatory Commissions on this subject than on the others. The discussion turned to a considerable extent upon the question of medical leadership in industry. Professor WILLIAM LINE, who is professor of psychology at the University of Toronto, called upon medicine to show leadership in this field which hitherto it had found difficulty in giving. "Medicine is in danger—on the North American continent at least—of becoming or continuing as a vested interest that will hamstring us as much as would the Church or industry itself." There had always, of course, been the example of the general practitioner in taking individual well-being as an objective, and there had been exciting, though isolated, instances of medical leadership in public mental health. He recalled the dramatic change of medical leadership in the Canadian Army in 1941 associated with the appointment of Brock Chisholm, now director-general of the World Health Organization, as D.G.M.S. Up to that point army medicine had followed the traditional pattern of wounds, sickness, and sanitation. Immediately, however, there began to emerge a series of general staff directives to the effect that illiteracy in a culture demanding literacy was a health matter, that routine as a dominant condition of employment was a concern of the medical officer, as were selection and induction, and so on through the whole gamut of service morale. The whole conception of social ill-health was medical in origin, at least at the technical level. "The great virtue in medicine lies in its professional tradition. To the doctor there is no distinction between manager and worker. Neither can the doctor's policy or technique be prescribed by anyone other than his professional associates, whom he represents at all times."

All mental health work in industry, declared Professor Line, should be sponsored by professional medicine. The exact method of sponsorship would have to be determined locally, but the sanctions would be those of the ultimate professional medical authorities. If the present Congress contented itself with blessing lay groups, however politically or economically dominant they might be at the present time, and failed to meet the challenge of universal professional health sponsorship, it would have failed dismally. Work and industry were public health matters of first priority.

Dr. G. R. HARGREAVES raised the delicate point of the doctor's own industrial relations. Psychiatric hospitals, he said, displayed an archaic, autocratic pattern of working groups such as no longer existed in industry. The professional group was detached from other workers who made the wheels go round, so that very few doctors knew the name of the nurse who worked in their ward or the name of the liftman who took them up to that floor. Yet medical men, like others, were in a working group which could not be separated from the rest of society. This speaker dissented from Professor Line in his insistence that public health leadership should necessarily be undertaken by doctors, and he was doubtful whether social science and research in industry should necessarily be under medical control. One of the most distinguished professors of public health was an engineer, and the adviser on nutrition policy to the Ministry of Food was a biochemist. It would be foolish to believe that doctors were the only people to make a leading contribution in the field of health. At any moment, as occasion served, one or other member of the team—psychiatrist, sociologist, educationist—might take the lead. Dr. ELLIOTT JACQUES spoke somewhat to the same effect. The problem of human relations in industry applied also to those who worked in the medical and social sciences. Could it be said that in scientific societies, in mental and general hospitals, in university departments, human relations concerning medical and other staffs were always modelled on the pattern they would like to see adopted in industry?

Dutch, Finnish, and French delegates took part in the discussion. Dr. P. M. TURQUET made the useful point in an international assembly that many of the English terms used had no exact equivalent in other languages, and if they were to become world citizens they should use translatable terms. He knew of no French equivalent for "nervous breakdown," "frustration," "pilot study," or the statistical term "scatter," and similarly certain French and German terms appeared to have no English equivalent.

Concluding Sessions

The closing sessions of the Congress were devoted to the subject of planning for mental health: organization, training, and propaganda. Dr. T. FERGUSON RODGER, professor of psychiatry, University of Glasgow, and Dr. A. QUERIDO, director of department of mental hygiene, Amsterdam, presented detailed surveys of present mental health services, with indications for the directions in which they should be extended. Dr. J. KEARNEY (Dublin) described the operation of the Irish Mental Treatment Act, 1945, whereby no judicial authority intervenes in the process of the reception of persons of unsound mind or temporary patients into a mental hospital. The procedure is entirely medical, and the Act has done much to remove the stigma so long associated with mental disease. Col. A. A. W. PETRIE gave some indication of the problem in the L.C.C. area, where 34,000 people are dealt with under the Mental Treatment and Mental Deficiency Acts. In general discussion the complaint was made that there was almost no reference to the role of the teacher in the documents before the Congress, and that none of the national delegations included a practising teacher.

At a meeting held under the auspices of the National Association for Mental Health Dr. DORIS ODLUM and others spoke on the various methods of bringing the principles of mental health home to the public—the appeal, on the one hand, to specialist groups such as educationists, magistrates, and industrialists, and, on the other hand, to a wider public, to whom the matter must be presented in some concrete way. The Royal College of Nursing arranged a special session for nurses, at which speakers from the United States, South Africa, and this country discussed recent trends in mental nursing. The Royal Medico-Psychological Association continued on a second day its discussion on the widening conception of psychosomatic medicine. Dr. H. CRICHTON-MILLER suggested that there was a tendency among psychiatrists on both sides of the Atlantic to reserve their diagnostic and therapeutic activities for only one side of this problem—namely, the influence of the mind upon the body. If they were to be balanced in their treatment of both neuroses and psychoses they must not neglect the influence of the body on the mind. In Westminster School Hall a playlet entitled "The Universal Heckler," produced by Miss OLGA DRUCE (U.S.A.), was demonstrated as a method of public education on the topic of anxiety.

World Federation for Mental Health

At the final meeting of the Congress Dr. J. R. REES announced that a World Federation for Mental Health had been constituted during the week, with an executive committee consisting of twelve members from almost as many countries. The members of the Federation would be not individuals or nations but the professional societies in the various countries interested in this subject, and it was hoped in this way to secure a real co-operation of all bodies—educationists, psychologists, anthropologists, sociologists, and psychiatrists. The Federation would eventually, it was hoped, have an office in Geneva. Its annual assemblies would take place in different countries, and there would be no limit to the number of observers who could attend. Dr. Rees himself was elected the first President of the organization, with Dr. André Repond as vice-president and Dr. Kenneth Soddy as secretary.

Dr. JULIAN HUXLEY said with what pleasure he had heard of the formation of this permanent organization. The Executive Board of Unesco, at its last meeting, anticipating that the Federation would be formed, had recommended that it should be accorded consultative status so that it could be represented at Unesco meetings and receive grants and so forth. In giving help to the new Federation Unesco had not acted entirely unselfishly because it knew that it could not get on in the many fields of its work unless it received help from such non-governmental organizations.

Dr. BROCK CHISHOLM, director-general of the World Health Organization, said also that the first World Health Assembly had instructed its Executive Board to take such action as it might be able to take within its financial capacity on the recommendations which might issue from the World Federation or from the Congress.

Enlarged Concept of Mental Health

The Congress listened finally to two important statements summarizing the work of the Congress itself and of the International Preparatory Commission and the commissions in the various countries which had preceded it. Eighteen of these national commissions or discussion groups had presented written reports, and these were ably condensed by Mr. LAWRENCE FRANK, director of the Caroline Zachry Institute of Human Development, New York. Professor J. C. FLUGEL, chairman of the Programme Committee of the Congress, in a further summary, said that the ambitious programme of the Congress had meant an enlargement of the usual conception of mental health.

"It has involved a new attitude on the part of the medical profession. Here I may allow myself a few words as a non-medical academic psychologist. I think it was H. G. Wells who said many years ago that psychologists had nothing to do with the mental ills of mankind. Who with a sick soul would go to the psychologists? It is the medical psychologists who have changed all that, and the methods with which we approach the problems of mental health in their new and wider significance are largely methods which have come from the field of medical psychology. But it is remarkable—a fact to which some non-medical psychologists have drawn attention—how completely our medical colleagues have overcome their natural scruples about the enlargement of their domain and the handing over of a portion of their province to others who were not thought previously to be concerned with these spheres. Health was regarded as the sphere of the doctor, not often of the teacher, certainly not of the psychologist, who was expected to restrict his work to the laboratory.

"But it has been largely through the work of the doctors that psychology has come into more intimate contact with ordinary human life. I wish to testify to the extraordinary generosity and grace with which the doctors among us have handed over a portion of their province and allocated some of their labours to another sphere. Transitions of this kind do not always occur with sympathy. I remember in my youth the objections of the philosophers to admitting that psychologists had any particular place that was not the intimate concern also of the philosopher. The philosophers in my day felt that they were competent to deal with all the problems of psychology. But medical psychologists have not taken that attitude. In the course of our discussions we have heard how mental health considerations must be borne in mind by a whole host of people to whom these notions previously were quite foreign."

Dr. REES, in closing the Congress, commented regretfully upon the absence of a Russian delegation. Such a delegation had been fully expected even until after the Congress had begun. A programme was sent to the president of the Academy of Medicine in Moscow, and he would receive a copy of the proceedings in due course. With regard to the World Federation for Mental Health, one of the first acts of its Executive Board had been to request the twenty or more members of the International Preparatory Commission to become an advisory intra-professional committee for the Federation.

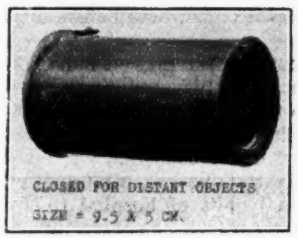
The President concluded his remarks with warm expressions of thanks to all those in various parts of the world who had helped to make this event so memorable and successful. Dr. Rees himself received a great tribute of acclamation from the whole body of the delegates.

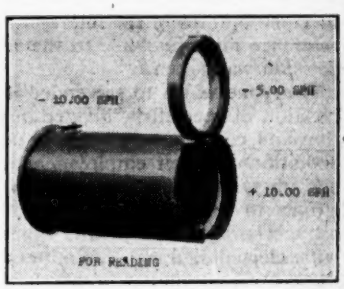
Preparations and Appliances

AN AID FOR DEFECTIVE DISTANCE AND NEAR VISION

Mr. F. W. G. SMITH, ophthalmic surgeon, Kent and Canterbury and Margate Hospitals, writes: This device, which should be used with the patient's correct *distance* glasses, unless emmetropic, was evolved to provide a simple aid for those persons, usually elderly, who were unable to have the vision of their better eye improved beyond 6/60 or 6/36 owing to corneal, lens, or, particularly, retinal changes. I have not had much success with telescopic spectacles, their equivalent in contact lenses, or other methods in old people, as senility and lack of concentration were contraindications in many cases; these conditions may apply to a lesser extent to the aid which is here described.

This instrument, which has the trade name of "dualocular," is used like a telescope, and can be carried slung round the neck on a ribbon. It is made of light plastic material. Magnification is about ×2½, and 6/60 vision may be improved to 6/24 or 6/18. For reading, the movable lens is swung out; print is





focused at about 9 in. (22.5 cm.); J1 is enlarged to J4. To obtain fuller magnification the eyepiece end can be held very near the print and the movable lens swung out. The eye should be about 12 in. (30 cm.) away to bring the object into focus. Additional illumination is required for this method.

The "dualocular" is made for me by Messrs. R. S. J. Barton and Partners, 27, Friar's Close, Whitstable, Kent, and the present price is £2 10s. Instructions are supplied, which include a warning that the aid should be used only by those who have had their eyes examined and that it should not be considered a cure for failing vision.

The Birmingham Executive Council has approved in principle a scheme for the establishment of a central telephone control for doctors. It is suggested that there should be an emergency call-sign and that anyone needing a doctor in a hurry would ring this number if for any reason they were unable to get through to their own doctor. The operator in the control room would then find the nearest available doctor who could take the call. The views of the local medical committee and of the Ministry of Health on the proposal are to be obtained. The council accepted in principle recommendations for the association of groups of doctors with the maternity and child-welfare services provided at clinics near their practices, and also for the association of district nurses, midwives, and health visitors with the groups of doctors. The council also recommended that general practitioners should have direct access to hospital pathological and *x*-ray departments, and this matter will be taken up with the regional hospital board and the board of governors of the teaching hospitals.

Correspondence

Organization of Consultants and Specialists

SIR,—The information on the new move on the above subject contained in your leading article (Aug. 14, p. 343) and in the report of the first meeting of the new Central Consultants and Specialists Committee (*Supplement*, p. 81) will come as a surprise and shock to many specialists who have been thinking that as far as the B.M.A. was concerned the manner of their representation had been settled at the Annual Representative Meeting last June. As this move to explore the prospect of collaboration with the Royal Colleges and Scottish Corporations, even to the extent of setting up a joint committee, to which, to some degree at least, the new Central C. and S. Committee would be subsidiary, has now been made public in the *Journal* and in the *Lancet* of Aug. 7, it should be considered by the local and regional committees of specialists and it is necessary to make some comment on the subject.

Specialists will be surprised that any move at all has been made to discuss with the Colleges the formation of a joint committee. For the constitution of the new Consultants and Specialists Committee states that it will "consider and act upon all matters affecting those engaged in consulting and specialist practice," and will be autonomous. Further, it had been made clear that at least in the eyes of the Association it would be the only negotiating body for consultants and specialists. No one therefore would expect that the new committee would be made in any way subservient to any other body.

It must be stated that this move was not initiated by the new Central C. and S. Committee. When the committee was informed of the conference of the President and Chairman of Council of the Association with the Colleges it decided that further conference should only be exploratory of the possibilities of collaboration in the interests of specialists and, further, that reference must be made to the regional committees before any decision was taken.

Everyone wants to see ended if possible the present unhappy position of specialists, divided in their loyalties and representation and consequently weak in negotiation upon the terms and conditions of their employment in the National Health Service and upon other matters. It was for that reason that we have striven to set up a completely representative organization for all specialists based on the functional units of hospital staffs, with elected regional committees from which the majority of the central committee would be elected. We agreed to set up this organization through the B.M.A., first because that was clearly the only body with the resources available to allow us to be immediately and strongly represented, time being at present an important factor; and, secondly, because the specialists could in that way be represented through the same body as all other branches of the profession and the unity of the profession thus be preserved.

It is evident that most specialists have approved of this organization in preference to the proposal of Lord Moran for an *ad hoc* committee of the Colleges and the various special-practice associations. For they have seen in the latter merely a recrudescence of the old Consultant Services Committee, which was ineffective, and have understood that an *ad hoc* committee for the continuous representation of professional interests could not be as efficient or acceptable as one built up democratically from the periphery to the centre. They have also known that the special-practice associations, as for example the British Orthopaedic Association to which I belong, are not constituted for medico-political purposes but are purely scientific bodies. So also the Colleges are clearly academic and examining bodies, undemocratic in their constitutions and in their Councils representative very largely only of the teaching members among specialists. There can be no doubt that despite their loyalty to the Colleges as academic institutions most specialists not only do not want the Presidents and Councils to intervene in medico-political affairs or to represent them in negotiation on terms and conditions of employment, but actually resent their attempts to do so because they have no means of keeping in touch with the rank and file. However desirable it may be, therefore, that harmony shall exist between the B.M.A. organization and those who control the Colleges, it is unlikely that specialists will accept a position in which, through the existence of a joint committee, the authority of the Central Consultants and Specialists Committee to consider and act upon all matters concerning special practice might be impaired. On the other hand, it appears obvious that the true functions of the Colleges are examining, research, and postgraduate education, as Lord Webb-Johnson has himself indicated (July 3, p. 46). If a joint committee is set up it will be difficult to define its functions and powers and for it to operate without offending one or other of its constituents.

There is a danger that in trying to please everyone in this matter we shall please no one. Certainly, if the authority of the Central Consultants and Specialists Committee is impaired, the specialists attached to the non-teaching hospitals will have to reconsider whether they should continue to be represented through it or should revert to and build up their own association as a Regional Hospital Staffs Association. For it is clear that while they have consented for the sake of harmony to equal representation on the Central Consultants and Specialists Committee with the representatives of the teaching hospitals (which of course they greatly exceed in numbers of their hospitals and personnel), they would be likely in a joint committee with the Colleges, the Councils of which are mainly composed of teachers, to find themselves in a minority of perhaps one in five or more. Unfortunately there have been and continue to be (*vide* the medical membership of the Central Health Services Council) many indications to the non-teaching specialists that they are to be assigned a minor place in status and in the councils of the Health Service. For that reason they formed their own association several years ago and they may return to that if they cannot feel sure of the protection of their interests in the B.M.A. organization. If that should happen, that organization would fail by losing the greater part of its support.

As one who has taken some part in forming the new organization I hope that nothing will be done now to destroy it by weakening its authority. As a Fellow of one of the Colleges for many years I also want to see the Colleges remain true to their proper functions and in that way best maintain their dignity and influence.—I am, etc.,

Bournemouth. N. ROSS SMITH.

Post-pituitary Extract in Obstetrics

SIR,—The method whereby posterior pituitary extract is given by a slow-drip intravenous infusion of a dilute solution, as advocated by Mr. G. W. Theobald and his colleagues (July 17, p. 123), is attractive so far as the treatment of uterine inertia is concerned. In the belief that it probably more closely resembles the physiological output of oxytocin by the pituitary, I have used a similar technique in a few cases during the last twelve months, and within the limits of a small experience I can confirm some of Mr. Theobald's statements. Our procedure consisted in giving a stronger solution (one part of "pitocin" in 1,000 parts of 5% glucose saline), but at a slower rate (maximum 16 drops per minute, and often less). The total dose only once exceeded 10 units of pitocin. The women treated were all suffering from long-standing uterine inefficiency which had failed to respond to the usual remedies, and all had been in labour for not less than 48 hours. The strength and frequency of uterine contractions were increased in proportion to the rate of the drip and could be controlled almost at will. The rapid response of the uterus to either speeding or slowing the rate of infusion appears to offer a degree of safety to mother and child which is lacking when single doses of oxytocin are given intramuscularly or subcutaneously.

In some cases of inertia the beneficial effect of the oxytocin drip is remarkable, but unfortunately the results are not always good. This is almost certainly because inertia varies in type and aetiology. The effect of the treatment is to enhance the activity of the uterus, but it does not apparently change the quality of the action. Thus, when the inertia is of the hypertonic type, or when a quiescent upper segment is associated with high tone and increased resistance in the lower segment and cervix, the efficiency of the uterus is not improved. The uterine contractions are increased but remain incoordinate, as evidenced by the patient's symptoms and by the failure of the cervix to dilate. Our observations to this effect appear to be

borne out by the account of Case 7 in Mr. Theobald's article. Moreover, I am informed by Dr. S. R M. Reynolds, who also has been using oxytocin by intravenous drip and recording the effects on three areas of the uterus simultaneously by means of the "strain-gauge multi-channel tokodynamometer," that his results indicate that posterior pituitary serves only to augment existing uterine motility and in certain cases results in increased activity of the middle zone of the uterus rather than improved expulsive contractions of the fundus, thus hindering instead of assisting the progress of labour.

Mr. Theobald points out that an intravenous oxytocin drip does not take pride of place over analgesics and anti-spasmodics in the treatment of inertia, and it seems wise to add that even when these have failed it should not be given without first taking care to exclude as far as possible incoordinate uterine action. In this condition it is of no value and it may make matters worse, even to the extent of producing a contraction ring. Its real indication is the uterus which is hypotonic but whose polarity is not disturbed. Even then we have found that after prolonged treatment the uterus which initially responds well may become refractory and cease to react when the rate of the drip is increased. This is in keeping with a similar phenomenon which can be seen when intramuscular injections of posterior pituitary extract are repeated at frequent intervals.—I am, etc.,

Liverpool. T. N. A. JEFFCOATE.

Treatment of Typhoid Carriers

SIR,—The careful inquiry into the efficacy of penicillin and sulphathiazole on chronic typhoid carriers reported by Drs. R. M. Fry, R. E. Jones, B. Moore, M. T. Parker, and S. Thomson (Aug. 7, p. 295) is particularly commendable for the strict criteria demanded before a cure was assumed. It is to be hoped that other forms of treatment will be examined with equal care before being offered to patients. In particular this should apply to surgical treatment, for it is possible that surgery may be more frequently advised now that the ineffectiveness of current chemotherapeutic methods has been demonstrated.

Attempts to cure the chronic typhoid carrier by removal of the gall-bladder presuppose that this organ contains the only focus of infection in the body. For this belief there is no pathological evidence. Animal experiments have revealed lesions in the wall of the gall-bladder, but these have not been observed in human cases. The bacilli certainly flourish within the bile in the gall-bladder and evidence of a mild cholecystitis is generally found, but no focus of bacilli has been found in the wall; indeed there is still much in favour of Gerbat's belief that the gall-bladder merely acts as a human test-tube containing the bile culture medium in which the organisms flourish so readily. Furthermore, even if it could be established that there was a permanent focus in the gall-bladder, there is no way of establishing that there are not other foci, either primary or secondary, which would of course be uninfluenced by cholecystectomy. Thus Saphir *et al.*[1] found that, although they could sterilize the bile (eight negative duodenal intubation specimens being their evidence for this), none the less faecal excretion of bacilli continued in sixteen out of twenty-one cases; this strongly suggested the presence of other foci either in the intestines, the bile ducts, or elsewhere. Indeed in Fry's series the reappearance of bacilli after apparent sterilization also raises this suspicion.

Despite these difficulties many authorities regard cholecystectomy as a certain cure. Many claims of successes have been made, but subsequent investigation has shown that many were based on bacteriological criteria of cure which are now held to be invalid. Thus the cure rate of 75% quoted in the report[2] of the Infectious Diseases Subcommittee of the Research and Clinical Committee of the Royal Medico-Psychological Association is based on unstated criteria of cure and upon work done at several different laboratories and hospitals. Again Browning *et al.*[3] were forced to reject most of the reported cures as being invalid, although three of their own cures were strictly tested. Furthermore there is a long unpublished list of failures reaching widely round the globe which, though they are unlikely to find their way into the medical press, would substantially dilute the percentage of claims made on the published series of very few cases. It is doubtful if much hope of permanent cure can be offered to the chronic carrier by cholecystectomy, and it is hoped that in future it will only be advised after careful thought—e.g., in young patients with a short history (and therefore with more chance of the gall-bladder being the only focus) whose bile is persistently positive and who are incapable or unwilling to control their potential danger by other means.

Lastly, it is more than probable that before long an efficacious chemotherapeutic remedy will be discovered. In the meantime attention should be directed to the bedside, for it is often through careless initial surveillance that carriers escape. Anyone who has dealt with over two hundred cases of typhoid must be frightened by the realization that on the law of averages he should have discovered from four to ten carriers. But more important still is the possibility that chemotherapeutic remedies may be effective in the early stages of the carrier state; proof that these remedies have no beneficial effect in a series of carriers of between three and sixteen years' duration does not imply that they will have no effect if given in the early stages. Vigilant testing of stools should therefore continue with added zeal, and when a carrier is detected intensive treatment should be commenced at once with penicillin and sulphathiazole or with iodophenolphthalein.[1] Despite the inevitability of thus including in the treatment those convalescent carriers who might recover spontaneously, such a procedure might none the less preclude some chronic carriers from developing.—I am, etc.,

Hadley Wood, Herts. JAMES T. HAROLD.

REFERENCES

1 *J. Amer. med. Ass.*, 1942, **118**, 964.
2 *J. ment. Sci.*, 1936, **82**, 263.
3 *Chronic Enteric Carriers and Their Treatment*, 1933. Spec. Rep. Ser. med. Res. Coun., No. 179, Lond.

The B.B.C. and the N.H.S.

SIR,—It is a pity that a serious paper should publish a letter containing so many inaccuracies as that on "The B.B.C and the National Health Service" by Dr. Ff. Roberts (July 24, p. 224). Since those of your readers who did not hear the broadcast may have received a very false impression, I should appreciate the opportunity of making a few corrections.

1. Your correspondent writes, "We heard a mother's dread of the voluntary hospitals transformed into joyous confidence in the same hospitals nationalized." No such incident occurs in the programme (I write with the script before me). A mother certainly showed a certain amount of anxiety when the doctor told her her child should go into hospital. This is a natural reaction, since the layman connects a stay in hospital with serious illness. No comparison, however, was made between voluntary hospitals and nationalized hospitals until the question of expense came up, when it was pointed out that, whereas a charge used to be made according to the patient's financial status, now no payment is necessary.

2. Your correspondent writes, "The hero of the piece was a surgeon . . . to him came a Mr. Venables, intended to be a typical *nouveau riche*. . . . He wanted to know whether he should remain a private patient or become a public patient." Mr. Venables naturally went to his own general practitioner to discuss this question—not to a surgeon. This point, of course, is scarcely worth mentioning except that it illustrates the generally low standard of accuracy throughout the letter. Venables was portrayed as a reasonably sympathetic character—a man of shrewdness and common sense. He was not "intended to be a typical *nouveau riche*" (your correspondent, by the way, professes a curious omniscience with regard to my intentions, which he mentions several times). The conversation between Venables and his doctor was intended to be of interest to those people who are able to afford to remain private patients and therefore are faced with the problem of deciding whether it is worth the expense or not. It was pointed out that the private patient had certainly enjoyed considerable advantages over the panel patient in the past and that it appeared likely that he would continue to enjoy advantages over the national patient in the future, but perhaps not quite so many. Venables decides to remain a private patient. Your correspondent says that he shows his astuteness but comments that this was contrary to my intentions. Why should he think so? We are all free to choose our luxuries in accordance with our incomes and personal tastes. There is no question of either praise or blame.

3. Your correspondent writes, "Playing opposite to the hero was the villain, personified of course by the medical superintendent." I was somewhat mystified by this statement, since no medical superintendent appears as a character in the programme at all. A medical superintendent is, however, mentioned in one anecdote concerning a case of torticollis—an anecdote which happens to be true. Your correspondent writes, "The superintendent was for discharging her (the patient), but the hero nobly stood his ground, thereby risking

his career in the interests of humanity." Unfortunately, your correspondent has completely missed the point of the story, which he appears to think was told against the "bad old days." The opposite is the case. The story is told by a physician who fears that the new Service will threaten the independence of medical opinion and action. He tells of this clash with the medical superintendent of his hospital, pointing out that his refusal to comply with the medical superintendent's advice did not involve any risk for him, since he was in no way dependent on the medical superintendent for his livelihood. He expresses a fear that similar independence might be costly in future.

It is to be regretted that your correspondent did not take the precaution of checking his facts before making this venture into radio criticism.—I am, etc.,

Broadcasting House, London, W.1. NESTA PAIN.

Excretion of Antimony

SIR,—With reference to your annotation (July 10, p. 83) on this subject, pharmacologists elsewhere have confirmed the records[1] made in Egypt in 1931 and subsequently showing that half the amount of antimony injected may be recovered from the excreta within a month. This would account for the reappearance of ova in the excreta of patients undergoing the treatment with massive doses here in Natal with the sodium equivalent of tartar emetic as recommended in Southern Rhodesia. It is unreasonable to rely on the mere absence of ova from the excreta as evidence of the destruction of the adult worms until they have had time to recover from the effects of the drug or have been demonstrated by post-mortem examination.

I was asked to examine a tobacco planter whose skin test had given a positive reaction for schistosomiasis in Southern Rhodesia. As he showed no signs or symptoms of infection and his eosinophils were only 2.5% I did not consider that any treatment was indicated. He stated that his natives refused to submit to the treatment adopted for a rapid cure since several of their colleagues had died from its effects.—I am, etc.,

Durban, South Africa. F. GORDON CAWSTON.

REFERENCE

[1] Khalil, M., *Arch. Schiffs- u. Tropenhyg.*, 1931, **35**, 106.

Diabetic Coma

SIR,—I have read with great interest Professor R. H. Micks's article on diabetic coma (July 24, p. 200) and Drs. R. D. Lawrence and Wilfrid Oakley's letter on the same subject (Aug. 7, p. 310), and I should like to add one or two points to the discussion. Treatment of diabetic coma must be directed towards remedying not only the metabolic derangements but also the concomitant biochemical changes and associated disturbances which occasionally culminate in sudden death.

Dr. Lawrence and Dr. Oakley rightly stress the need for careful administration of insulin in the average case of pre-coma, whereas the case of profound coma requires heroic treatment with very large and repeated doses of the quickly acting soluble insulin. It must always be remembered that circulatory collapse is the most dangerous feature of diabetic coma, and the patient must be treated for shock—the maintenance of blood pressure being as important as in any other condition of shock. Fluid and food by mouth should always be withheld, since they are dangerous at this stage. The patient must be kept warm to prevent further heat loss, and aspiration of the gastric contents to prevent dilatation of the stomach with subsequent possible inhalation asphyxia—a definite cause of death in diabetic coma—should never be omitted. Professor R. H. Micks draws attention to the importance of gastric aspiration in the management of diabetic coma.

An intravenous saline drip, where necessary, to replace fluid loss, thereby correcting dehydration and the blood chemistry, is a very necessary part of the treatment of all cases of diabetic coma. Professor Micks states that Root's statistics strongly support his claim that normal saline is the only intravenous injection needed in diabetic coma and that other authors have asserted that alkalinizing solutions are necessary or that plasma should be used. Of the American authors, Root and Joslin do not advocate alkalinizing solutions, while Russell M. Wilder, of the Mayo Clinic, recommends the administration of alkali if the carbon dioxide combining power of the plasma is less than 20 volumes per 100 ml. I believe that the decision to give or withhold alkalis depends on simple basic principles.

The indication for the administration of alkali is marked hyperpnoea, and if this symptom is present the administration of alkali can be a life-saving measure. In the average case of diabetic coma or pre-coma there is not the distressing hyperpnoea which is a feature of some cases of profound coma. Where there is marked hyperpnoea, however, administration of alkali—25 g. of sodium bicarbonate in 5% solution intravenously—should always be administered, as death from respiratory paralysis occurs in uncorrected severe diabetic acidosis through over-stimulation of the respiratory centre. It is true that insulin in the presence of adequate glycogen will correct the acidosis and therefore the hyperpnoea, but this is a comparatively slow process. Intravenous alkali, on the other hand, although not preventing acidosis will rapidly remove the dangerous symptom of hyperpnoea. The importance of aspiration asphyxia and respiratory failure due to marked hyperpnoea as causes of sudden death in diabetic coma have not received the prominence they merit and cannot be over-stressed.

Although there is a difference of opinion as to whether glucose should be given during the treatment of diabetic coma, it is certainly wise to give glucose in those cases receiving large amounts of insulin, particularly after the first 6–12 hours; 1–2 g. of glucose for each unit of insulin injected will guard against hypoglycaemia, which is a constant danger when repeated large doses of insulin are administered. Therefore, if it is not practicable to perform frequent estimations of the blood-sugar level, glucose should always be given in order to guard against hypoglycaemia, except in the earliest stages of treatment when the blood-sugar level is always high.—I am, etc.,

Maidstone, Kent. GEORGE R. W. N. LUNTZ.

Peritoneoscopy

SIR,—I read with great interest the paper by Mr. John Hosford on peritoneoscopy (Aug. 14, p. 348), but before the term becomes part and parcel of our medical vocabulary I should like to follow Rendle Short's example and offer "coelioscopy" as an alternative. "Peritoneoscope," in addition to being clumsy and cacophonous, would mean an instrument for viewing the peritoneal membrane and not necessarily the abdominal viscera. The other term suggested in the article, "laparoscopy," being derived from λαπάρα, the flank, is also a misnomer, as is "laparotomy"; the only true laparotomy is a kidney incision.

On the other hand, "coelioscopy" (or perhaps more correctly "coeliascopy")—a far neater word than the others—means the examination of the abdominal contents (κοιλία), which is the true purpose of the operation. In general, I feel that more care should be taken with our vocabulary. Had this occurred in the past, we should have been spared many glaring errors. I suppose it would be pedantic to quarrel with "appendicectomy," but surely "hypophrenic" or "subdiaphragmatic" are preferable to the hybrid "subphrenic," and "proctocele" to "rectocele"?—I am, etc.,

Guildford. A. BARNSLEY.

Choosing a Career

SIR,—It seems to me that in recent months we have devoted a great deal of attention to monetary considerations resulting from the passage of the Health Service Act. The Spens Report has still further accentuated the financial aspects of medical work and appears to have justified the demand for raising the standards of direct payment in all clinical posts. From the university point of view this has been followed by increases in the salaries of professors and lecturers in all faculties—medical and non-medical alike. The young graduate on the road to specialism has perhaps come best out of the deal, and if the younger generation of teachers in the preliminary subjects has been overlooked it broaches a question which demands an immediate answer.

In my view, however, elements other than those of remuneration should have the attention of the potential doctor after he has, from about the time of his third year onwards, surveyed the field of medical service. His object should be that of selecting from this field the type of work which would allow him on retiring to look back with satisfaction on his life's journey. They are, indeed, fortunate who can do this. In our profession at the present time there is a wide range of choice open to candidates. Given a certain standard of ability, coupled with

industry, energy and dexterity, and perhaps ambition, the student must be entitled to decide for himself in what direction his work might be expected to bring its own reward. In coming to a decision personal trends must be given due weight :

1. There are those whose chief thrill comes from research, in following out a line of thought by experiment and logical reasoning, hoping in the end to reach a worthwhile result. For them medicine provides an ever-widening horizon, each fresh discovery a stepping-stone to the next.

2. Others are thrilled by imparting instruction on established facts and possible theories to individuals or groups. We speak of the "born teachers," whose gifts both bring and bestow enjoyment.

3. Others still are attracted by the thrill of being the bearers of hope and confidence to the sick as they are found in the wards and out-patient departments of our hospitals. Valuable equipment for these is what, for want of a better term, we call clinical instinct, and for them there is again a wide choice among the many departments of clinical work, each with its own peculiar attraction.

It is my experience that all these qualities and ideals are seldom combined in a single individual, and at a time when money prizes are unlikely in the future to compare with those of the past, but where for every medical graduate a livelihood is assured, a young man or woman should be encouraged to follow that course in which the work itself would be a continuous joy, and from which he or she might be expected in the end to obtain the maximum of individual satisfaction. If I might be permitted to end on a personal note it would be one of thanks to an old teacher, the late Professor James Lindsay, who at a critical moment gave me advice which I pass on to those faced to-day with the entrancing and decisive problems of youth.—I am, etc.,

Belfast. S. T. IRWIN.

Prevention of Venereal Disease

SIR,—The numerous correspondents in the *Journal* of July 31 (p. 268 *et seq.*) appear to have missed the essential points of Lord Horder's letter (July 17, p. 171), and the simplest way to reply to the various issues raised in their letters is to restate the main heads of the campaign. The campaign of the N.S.P.V.D. is directed towards the enlightenment of the public on the following matters.

1. Over a long period of years the abundantly proved fact that V.D. is easily preventable has been prevented from reaching the public, and in spite of lavish public expenditure on other methods V.D. has increased.

2. The Report of the Government-appointed Trevethin Committee settled once for all the scientific fact that V.D. is easily preventable. Abundant scientific evidence was laid before that committee, and this was confirmed by overwhelming evidence from myself and others as the result of wide experience in reducing V.D. in the Services. Dramatic reduction in V.D. has always followed the introduction of reasonably effective self-disinfection.

On the subject of practicability for the average person the Report says : "We see no reason to doubt that an intelligent man, if furnished with reasonable instructions, could in favourable conditions effectively disinfect himself." A study of the actual instructions will convince anyone that no high degree of intelligence is required. The process is so simple that "official skilled supervision" of the disinfection is obviously superfluous. Practical experience, moreover, has shown conclusively that civilians will not seek such assistance, and that in the case of the Services the introduction of supervision and the unnecessary elaboration of the procedure have been the chief causes of the apparent lack of success on account of evasion. Officially supervised disinfection never has been, and never will be, successful on account of the psychological factors involved.

3. The Trevethin Committee Report replies effectively to the allegation that knowledge about preventives would lead to increased promiscuity. On this subject the Report says : "It is urged by some that any system of disinfection would tend to increase the number of exposures and to raise the disease rate. We have received no evidence of facts in support of this view, and we are inclined to think that those who hold it attach too much weight to the deterrent effect of the fear of the disease."

Conclusive evidence was supplied by myself and others that a campaign of prevention of self-disinfection in any area was often followed by a decrease in promiscuity, because the instructions given furnished the plainest proof of the danger of infection.

4. Not only is the spread of this important knowledge prevented but if it does leak out the law prevents any practical application. Incredible as it may seem, it is actually illegal for a chemist to sell to any customer the necessary materials for prevention accompanied by instructions for use. This continues in spite of the fact that the Trevethin Report in 1923 recommended that the law should be altered. Not content with compulsory ignorance the obstructionists prevent any useful application of any leakage of information. Could fanaticism go further ?—I am, etc.,

London, W.1. R. A. LYSTER,
Chairman, National Society for the Prevention of Venereal Disease.

SIR,—Statistics can be used to prove most things, and there are statistics to prove that prophylaxis is useless in the prevention of venereal disease. One instance will serve. In a certain distinguished battalion in Delhi 18 men contracted hard chancres in one month. Inquiry proved that all these men had used the unit prophylactic ablution centre, and had stated so in the prescribed form which men who contracted V.D. had to complete. This would seem to prove that prophylaxis was useless. Investigation of the forms, however, showed that the men had all exposed themselves to infection at 10 p.m. on various evenings during the month, had each used the P.A. room 15–20 minutes later, and that each had reported at the medical inspection room at 8 a.m. on the morning following exposure with a hard chancre.

I took a close interest in the prevention of venereal disease during the eighteen and half years I spent in India, most of it as a hygiene officer, and I wish to say that I have seldom found a British soldier in hospital with V.D. who had not used the P.A.C., but also that I have never, after inquiry, found a soldier in hospital with V.D. who had used the prophylactic ablution centre at the proper time. The centre had been used after the disease showed itself. On my visits I always used to ask the P.A. room orderlies the same question, "How many men have you known getting V.D. who had used the P.A. room at the proper time ? "—i.e., within an hour or so after exposure—and the answer was invariably the same, "None, sir." Early washing with soap and water would probably prevent 99 cases out of a 100. The use of mercurial cream after washing would make it as near a certainty as makes no difference.

Owing to the circumstances prevailing in a British division in India during the war it was decided not to establish unit P.A. rooms. Instead, the likelihood of infection if they exposed themselves was impressed on all ranks, and also the value of thorough washing on return to their quarters, using their own soap and towel, and then applying mercurial cream. Steps were taken at the same time to see that prophylactic packets were available for all, easily and unobtrusively. The results fully justified these measures.—I am, etc.,

Public Health Branch,
Control Commission for Germany. W. STRELLEY MARTIN.

Whooping-cough and Measles

SIR,—In the spring of 1938 an epidemic of measles (morbilli) coincided here with an epidemic of whooping-cough. Of 57 consecutive cases of measles seen by me, 55 were children and 2 were adults. Among the 55 children there were 46 cases of measles alone, 7 of measles developing during whooping-cough, and 2 of whooping-cough developing during measles.

Of the seven who had whooping-cough first and measles during its course all took a normal course without complications, and in two cases there was a suggestion that the whooping-cough was improved by the measles. Of the two with measles first and whooping-cough during its course one progressed to bronchopneumonia and the other was normal. Of the 46 cases of measles alone ten developed some complication or ran an abnormal course. Two had asthma at the height of the rash, never having had it before, one developed a persistent nasal catarrh, two developed erythema nodosum in the second and third weeks respectively with fever, one had joint and abdominal pains for four days before the rash came out and was unable to pass water during the third and fourth days of the rash, two had coughs persisting for more than 14 days from the commence-

ment of the rash, one had double otitis media, and one had a purpuric rash.

From this small number of cases it would appear that measles developing during the course of whooping-cough does not necessarily add to the severity of either disease, but the same cannot be said of the converse. Dr. B. L. Hodge (Aug. 7, p. 312) drew attention to a similar double epidemic, and his observations would appear to confirm this view.—I am, etc.,

Redhill, Surrey. L. J. BARFORD.

Fibrositis

SIR,—I should like to take up cudgels with Dr. James Cyriax over his article on fibrositis (July 31, p. 251), as I feel he is showing indecent haste in interring this condition. The essence of his case is that symptoms commonly attributed to primary fibrositis are really caused by derangements of the spine, and to prove this he compares the symptoms with those of such conditions as lumbago and brachial neuritis due to disk lesions. From certain similarities he draws the conclusion that fibrositis represents the lesser degree of these and related conditions. In stressing the similarities he glosses over the differences.

Observations made on oneself may have an element of bias in them, but as an occasional sufferer from both lumbago and fibrositis I have had opportunity to study both conditions at leisure. With regard to lumbago I am in entire agreement with Dr. Cyriax. The onset, after what one might term postural indiscretions such as an afternoon's gardening, lifting heavy weights off the ground, etc., followed by diffuse aching pain in the lumbar region combined with inability to fully extend the back—the whole lasting several days or weeks—bears the hallmark of a spinal derangement.

Primary fibrositis, on the other hand, has a curious tendency to occur with changes of climate, but bears no relationship to exercise or posture. Subjectively its pain does not feel to be of the same quality as lumbago. It is a disease of tender spots, each of an area so small that it can be accurately localized with the finger tip. It is not only confined to the shoulder girdle or the lumbo-sacral region, but, when extensive, tender spots are found over the insertions of the muscles and their bellies throughout the trunk limb, over the scalp, and over the backs of the metacarpals and phalanges—in places, indeed, where there is no muscle interposed between skin and bone. The condition is bilaterally symmetrical to an extreme degree, and tender spots may be found in the territory of so many spinal nerve segments as to make one shudder for the integrity of one's vertebral column—should Dr. Cyriax's theory prove right.

The response to treatment does not suggest a spinal lesion, as marked and permanent relief may be obtained from massage and heat applied to the tender spots, and the condition will improve more gradually though nothing is done. The spine need not be touched to effect a cure, and one wonders if time may not be the chief therapeutic agent when spinal manipulation or traction is used.

Finally, as regards aetiology, this may be under discussion, but my own feeling is that the lesions lie in the fascial sheaths covering both muscular and bony structures, and that the muscle spasm which is such a feature of the condition is merely protective to avoid stretching a tender fascia.—I am, etc.,

London, N.4. R. G. BENIANS.

SIR,—When Dr. James Cyriax (July 31, p. 251) calls primary fibrositis an imaginary disease he is in good company, but that fibrositis coming on for no apparent reason is always due to an articular lesion, as he states, seems open to doubt. I should like to quote the following case.

On Nov. 2, 1946, a district midwife, aged 24 years, recently married, no children, called at my house for advice regarding a neck stiffness which had developed two or three hours previously. On examination she had spasm of the upper margin of the left trapezius muscle, which was easily palpable and tender to touch. Obviously this was a true fibrositis, if the disease exists. Having some doubts about this, I made further inquiries. She admitted to having had a few colicky pains during the day, and on examination was found to be tender in the left fornix. A diagnosis of ruptured ectopic pregnancy was received by the patient with such incredulity as reflected doubts on my sanity. However, the following day she had a laparotomy and was found by Mr. Theobald, who had seen her in consultation with me, to have a ruptured ovarian pregnancy, with free blood in the peritoneum. In this case the last menstrual period had started about 17 days before the illness, and any faith in fibrositis on the doctor's part would have caused the diagnosis to be missed. But this was *not* an articular lesion, nor was there an apparent reason for the fibrositis.—I am, etc.,

Shipley. H. S. RUSSELL.

SIR,—In his article on fibrositis (July 31, p. 251) Dr. J. Cyriax has fallen upon a concept which has been promulgated in osteopathy for the last 70 years. The article, though condemning one aspect of the osteopathic theory, is essentially the theme of osteopaths for all these years—namely, that the spinal lesion is the cause of most local spinal and referred somatic pains.

The main difference now is that Dr. Cyriax stresses the intervertebral disk as being the faulty structure, whereas osteopathy stresses the apophyseal joint as being the site where significant changes have occurred. The probable truth is that both are to blame, sometimes one, sometimes the other, and frequently both together. It is, however, not possible to tell which part of the spinal joint is the offending structure except by inference, because, as Kellgren has shown, all deep pain is segmental in its manifestations.

With the advent of disk surgery and visible proof that prolapsed disks cause lumbago, sciatic pain, and brachial pain, the disk is now blamed for everything which happens to a spinal joint. But consider the pathology and the possible effect of manipulation. How can one manipulation, as suggested, normalize a torn cartilage? It might dislodge the offending piece from a sensitive structure, just as it is possible to manipulate a displaced cartilage in the knee and obtain relief straight away, but healing requires weeks. If one manipulation is effective, then the more rational explanation is that old adhesions in the capsule of the apophyseal joints have been snapped. The analogy of adhesions in a stiff knee is complete. One manipulation frequently cures, especially if the adhesions are old and brittle.

The osteopathic type of manipulation, while making use of specific forced movements for the purpose of breaking adhesions, does at the same time use gentle articulation of all the joints in the area of the lesion with the object of increasing local circulation and restoring normality there. The osteopath advocates a series of gentle manipulations without anaesthesia, and rhythmical traction is an important part of treatment. This probably assists in the healing of the intervertebral disk if and when it is damaged, and explains much of the success of their method.—I am, etc.,

London, W.1. ALAN STODDARD.

SIR,—Dr. James Cyriax's statement (July 31, p. 251) that primary fibrositis is *imaginary* is rather startling. Does he think the following cases are due to intervertebral lesions and not primary fibrositis?

A male, 72, has physical lesions due to fibrositis in both feet, calves, thighs, at brim of pelvis, around the spines of the vertebrae, in the thoracic walls, and also panniculitis (fibrosis of fat) at lower regions of thorax and around and between the breasts; also physical lesions in the neck and temporal regions, no sepsis found; also no rheumatoid arthritis nor osteoarthritis present. His posture and carriage are excellent. Fibrositis commenced at the age of 16.

A woman, 56, had pain in lower back for 20 years, and recently pain in the left lower abdomen. She had seen two physical medicine specialists, an orthopaedic surgeon, a consulting physician, and received every imaginable treatment. She was found to have fibrosis of fat around the pelvis and hips and a mass of fibrosed fat in left lower abdomen. She received 19 treatments of deep massage and has remained free from pain for 2½ years. No sepsis, osteoarthritis or rheumatoid arthritis, nor the usual physical signs of fibrositis found.

Good-fitting dentures suddenly become painful and are eased, and when this process has been repeated several times the dentures are ruined. In many cases it is due to fibrositis of the upper and lower jaws and can simply be remedied by deep massage a few times.

Does Dr. Cyriax manipulate as a rule with or without a general anaesthetic? Surely it is very difficult to believe that any of these cases can be *due entirely* to intervertebral lesions. It should be mentioned that in the first case the fibrosed mass, already palpable, becomes bigger and more obvious when

there is pain in the anterior aspect of the thorax, and strangely enough a nitroglycerin tablet relieves the pain in, say, 30 seconds.—I am, etc.,

London, W.5. R. HALSTEAD DIXON.

Use of Ring Pessaries

SIR,—It is always a pleasure to read a broadside from Mr. Mortimer Reddington (July 24, p. 227), for although some of the shots may be wide, many undoubtedly score. It is certainly true that in the past far too many women have had ring pessaries fitted. When I was chief assistant of the department at St. Bartholomew's Hospital it was the custom for these patients to come up one afternoon a week to have their rings changed by students who were undergoing their gynaecological training. They came in great numbers, but I suppose it was because in those days beds were few and the operation was not as safe as it is nowadays.

The ring pessary has, however, in my opinion certain definite uses. It can quite reasonably be advocated in the case of the young woman with descent of the vaginal walls immediately following childbirth where physiotherapeutic measures fail, but it is not fitted to support the tissues till involution has occurred. It is fitted to support the tissues until the baby is weaned and the mother can be operated upon. I think it is also of value to patients who have symptoms but no signs of prolapse. It should be used in those rare cases unfit for operation, and in those rarer cases where the patient refuses operation.

Now a word about the Hodge pessary condemned to be "put away altogether, and for ever." No splint will correct a deformed limb. The deformity must be corrected and the splint applied. If the retroversion is first corrected, then the Hodge will keep it so, provided it is long enough to reach from the posterior fornix to the vulva. I personally regard the Hodge pessary as invaluable in elucidating the cause of backache. I would never contemplate shortening the round ligaments for backache unless either the uterus could not be replaced or the patient's backache not dispersed by her wearing a ring for a short time.—I am, etc.,

Blackheath. KEITH VARTAN.

Foetus Papyraceus

SIR,—The case of twin pregnancy with acute hydramnios treated by abdominal paracentesis (July 24, p. 205) is most interesting, and Dr. R. W. Danziger is to be congratulated on the successful result. It is a pity, however, that more details were not furnished about the "blighted" twin, which is simply described as a foetus papyraceus. The interest lies in the aetiology of this condition, which usually follows mechanical compression of the foetus after loss of its liquor amnii; the compression may be effected by the fellow twin itself, or more usually by its bag of waters, but in order to produce a foetus papyraceus the compressing force must be adequate to cause collapse of all body cavities, so that maceration may be arrested. Thus the development of a rigid thoracic cage and firm cranial vault would prevent this pathological sequence. An analogy may be drawn between this phenomenon and the preservation of botanical specimens by pressure between sheets of blotting paper; the process of vegetable tissue autolysis cannot be prevented when the structures concerned are too bulky to be dehydrated by compression.

It is generally considered that the development of acute and subacute hydramnios in association with uniovular twinning is due to uneven foetal demands from the common placenta; the interplacental vascular anastomoses ("third circulation") allow the more powerful circulation to withdraw an excess of fluid into one foetus, resulting in some way in hydramnios for the larger and dehydration of the smaller twin. In most cases some sort of fluid balance is achieved, but rarely the smaller foetus may perish from fluid depletion, producing a dried, wrinkled specimen which does not undergo maceration and is not very much compressed. This is the mummified foetus, and many authorities fail to distinguish between it and the papyraceus.

In favour of a diagnosis of mummification in the case described is the fact that radiography some weeks after foetal death showed only failure of growth, with no unequivocal signs of compression. In addition, the foetal size was considerably smaller than the period of gestation should produce, suggesting impairment of growth before foetal death. Additional evidence would be furnished by the presence of fluid in the affected amniotic sac, which is naturally absent with a foetus papyraceus, and complete infarction of that portion of the placenta supplying the morbid twin.—I am, etc.,

Birmingham. W. G. MILLS.

Production of Rh Agglutinins

SIR,—In the article by Drs. George Discombe and H. O. Hughes (Aug. 14, p. 329) on the importance of transfusion as a cause of haemolytic disease, the paper by myself and others (*British Medical Journal*, 1945, **1**, 584) is quoted as having expressed the view that patients afflicted with certain diseases might be especially apt to produce antibodies to antigens which they themselves lacked. No such point of view was expressed in our article. The article concerned itself simply with a report of facts—namely, the truly colossal Rh agglutinin titre produced in response to multiple transfusions of Rh-positive blood, the comparative absence of symptoms in the incompatible transfusions, the technical pitfalls in the typing and compatibility tests, the ultimate outcome of the case, and a brief factual report on the necropsy findings. No opinion was expressed as to the relationship of the ready production of the Rh agglutinins to the patient's disease, nor was it even considered. I have personally never held or expressed the view that patients suffering from certain ailments might be especially apt to produce antibodies to antigens, especially the blood group antigens, which they themselves lacked.—I am, etc.,

Cardiff. R. J. DRUMMOND.

Independent Doctors

SIR,—Your annotation on "Independent Doctors" (Aug. 14, p. 347) concludes pathetically by saying, "There would appear to be no reason why such a committee [separate organization for independent doctors] should not be set up in the B.M.A." The B.M.A. has, apparently, as short a memory as Mr. Bevan. No doctor could avoid being shocked by the knavish way in which the B.M.A. deserted the sound stand it had taken (as a result of the strongly expressed views of the medical profession) when the appointed day drew near.

What is required by all doctors, and especially independent doctors, is an active body rather than a talking body such as the B.M.A. If Lord Horder can supply this dire need, good luck to him.—I am, etc.,

Bretby Hall, Burton-on-Trent. R. LUNT.

Surgical Anatomy of the Parotid Gland

SIR,—I was very surprised to see Mr. Hamilton Bailey's article on this subject (July 31, p. 245) and to find that he persists in writing in the same vein as in a similar article in the *Journal* of March 29, 1947 (p. 404).

When I read the latter-mentioned article I carried out a series of dissections on the parotid region after injecting indian ink along the main parotid duct into the gland. To identify the small ducts within the gland I had to use the dissecting microscope. My findings with regard to the relation of gland to the facial nerve were entirely at variance with those of Mr. Hamilton Bailey. I could not display a bilobed arrangement of the parotid with the facial nerve running between two lobes. To illustrate the relationship briefly, let me compare the facial nerve plexus to a trellis-work fence, with the parotid gland, like a creeper, growing from the direction of the buccal cavity and winding itself indiscriminately around the nerve and its branches. I communicated my findings to Mr. Hamilton Bailey, previous to my reading a paper on the subject to a meeting of the Anatomical Society of Great Britain and Ireland in London in November, 1947.

I should like to comment on two other points in Mr. Hamilton Bailey's article. First, the size of the main parotid duct—surely it is larger than a fine hypodermic needle? During my investigation a year ago I could easily insert a hypodermic needle of a substantial calibre into the duct. Because I have not the specimens to hand I cannot say more than that the duct is definitely larger in diameter than that of a fine hypodermic needle; and that observation is in formalin-hardened subjects where the tissues normally tend to shrink under the influence of

the preservative. Secondly, with regard to the presence of the accessory parotid gland, I should like to know in how many cases he looked for this part of the gland. The article leads us to believe that it is an infrequent occurrence. I have no figures to quote, but it is my opinion that careful examination would reveal it in at least a reasonably large percentage of cases.—I am, etc.,

Aberdeen. JOHN MCKENZIE.

Medical Photography

SIR,—With thirty-one years' experience as director of medical photography in a medical school in the U.S.A., may I offer brief comment on the several views expressed on this subject in the *British Medical Journal*? There is a world of difference between the terms progress and expansion. I like to think of the word progress to mean "to develop to a higher stage," while the word expansion impresses me as meaning an act or process of growing. Surely none of us could belittle the contributions advancing knowledge of photography has made to the field of medicine. Can we dismiss with a wave of a hand improved techniques and such innovations as colour photography, infra-red, ultra-violet, phase microphotography, and photography with polarized light?

As is true in other fields, the pace of medical photography was accelerated in wartime. The value of visual aids in the training of specialists was recognized by all. Hence it follows that many of these aids and methods will and should be applied during peacetime. Medical schools cannot function properly without these visual aids. By the same token hospitals to-day must become conscious of their responsibilities from the educational standpoint to both the doctor and the nurse. Photographic records of the progressive or regressive changes in the patient's condition are not only necessary but in many instances have proved invaluable, legally and otherwise. Pathological conferences and staff meetings are welcome and well attended by hospital staff members when the material presented is supplemented with good lantern slides or photographs. Does not a well-posed informative photograph convey more convincing evidence than the words necessary to describe the subject photographed? Can anyone paint as clearly with words?

Progress of medical research with its discriminating application must go on and will reach its ultimate aim. Medical photography must keep pace with this progress. The development of the medical photographic department should be commensurate with the practical needs of the institution involved. A department such as is mentioned by Dr. Ff. Roberts (March 13, p. 485) in the paragraph headed "The Fetish of Perpetual Expansion" is not a fair example of what constitutes the average medical photographic department. I cannot conceive of such an elaborate arrangement in the face of present needs unless it would be in conjunction with some huge medical centre of the future.

It is difficult to state just what constitutes the ideal medical photographic department. The nature and scope of the research carried on in the institution and the extent of the programme of the educational department will influence the selection of the personnel and equipment and the planning of space. Unreasonable demands upon the photographic department by staff members can be controlled. I think we will find that the committee in control of policy, economy, and efficiency would exercise the same good judgment in the establishment and maintenance of a medical photographic department that it would manifest in other matters concerning the institution. Medical photography cannot be denied and will go on contributing its share for the benefit of health. It shall go forward parallel with progress in the field of medicine and medical research, regardless of the tone of ridicule permeating some of the expressions appearing in the *British Medical Journal*.—I am, etc.,

Marquette University School of Medicine, Milwaukee, Wisconsin. LEO C. MASSOPUST.

Colonial Medical Service

SIR,—I am entirely in agreement with the suggestions made by your correspondent "Imperialist" (Aug. 7, p. 314). As a native of British Guiana I can refer to the vital statistics and health conditions in this colony. In my opinion British Guiana is one of the most unhealthy places within the Empire. I base my conclusion on the following facts. British Guiana has a higher birth rate than the United Kingdom, but the infant mortality rate is also much higher than in Great Britain. Between 1835 and 1941, 333,803 immigrants were introduced into the colony. The total population in 1945 was 373,598. This means that over a period of 110 years the population had increased by only 11%. Compare this with the 100% increase of population in Great Britain during the same period, despite two world wars.

Plantation hospitals catering for thousands do not have resident doctors. Plantation areas do not have antenatal and child-welfare clinics, nor is there a midwifery service in these areas. The majority of the population have to depend on unqualified persons employed in these places for the diagnosis and treatment of their diseases. Women on the plantations have to bear their children without midwives or even pseudo-midwives, and there have been instances of childbearing in the sugar-cane fields. Children have to grow up in an entirely unhealthy and insanitary environment, without adequate nutrition.

The Hon. Cecil Clementi, a former Colonial Secretary of British Guiana, described the position adequately in the two following sentences, "Improved sanitation is the paramount need of the colony to-day," and, "The most pressing duty of the Government at the present time is to protect the health and lives of the existing population and to see that instead of the death rate exceeding the birth rate, as has too often been recorded in the vital statistics of British Guiana, there is a steady natural increment."—I am, etc.,

GUIANESE.

*** This correspondence is now closed.—ED., *B.M.J.*

POINTS FROM LETTERS

Nurses' Examination

Dr. W. EDGE (Salford, Lancs) writes: Dr. J. H. Weir (July 10, p. 109) is quite right; the examiners often have no idea of the difficulties of nurses in digesting even the present syllabus, and there is no excuse for embarrassing them with completely irrelevant questions. Hospitals have enough trouble in securing and teaching student nurses. The lists of examiners should be overhauled. Only teachers should be asked to examine nurses.

Medical Illustrators

Miss ZITA M. STEAD (19, York Avenue, East Sheen, London, S.W.14) writes: I have received a letter from the Association of Medical Illustrators of America. This association was formed in order to raise and guarantee a high standard of work from its members, and each member must be adequately trained and actively engaged in medical illustration. The committee of the association would like to establish liaison with British artists, since they feel we could be of mutual help in many ways. They therefore extend a warm invitation to all medical illustrators in the British Isles who are interested in this idea and would like to get in touch with them. The treasurer's name and address is: Elizabeth Brödel, the Lying-in Hospital, 530, East 70th Street, New York, 21. I feel sure such an association would do much to improve the standard of medical illustration in this country, and I should be glad if any medical artist who is interested would please write to me.

Smoking and Diet

Dr. NEVIL LEYTON (London, W.1) writes: During the war when most nervous systems were under stress increase in smoking was explained by its soothing effect. But the habit has remained and one wonders why it has never been connected with post-war diet. Reduction of fats from 75 g. to under 40 g. per day means that everyone feels hungry sooner. Smoking often relieves this sensation, but the mechanism is not clear. The same result may be achieved by the administration of amphetamine. This substance and nicotine have similar properties in that they both cause an increase in gastric secretion and also raise the blood pressure, though just why either of these should reduce appetite is not obvious. All the same, if the Minister of Food could supply more fats perhaps the demand for cigarettes would drop to pre-war proportions.

Treatment of Pneumonia

Dr. N. WYNN-WILLIAMS (Bedford) writes: I agree with Dr. Malcolm Tate (Aug. 14, p. 356) that all patients who have recently suffered from pneumonia should have a chest *x*-ray film taken. However, his attention should be drawn to the fact that any modern tuberculosis dispensary (now usually and deliberately called chest clinic) will be only too willing to arrange such an *x*-ray examination for him. Many cases of this type are referred to my clinic, and a considerable number of cases of pulmonary tuberculosis and other organic disease are diagnosed in this way. We need not wait for health centres.

Obituary

THOMAS GWYNNE MAITLAND, M.D., D.Phil.

Dr. Thomas Gwynne Maitland died suddenly at his home in Cheshire on Aug. 10. He was medical superintendent of the Cunard White Star Company for twenty years. Born at Merthyr Tydfil in 1875, he was educated at University College School and at the Universities of Edinburgh, Manchester, and Paris. He graduated M.B., Ch.B. at Edinburgh University in 1907, and obtained his M.D. with distinction in 1908. He became a doctor of philosophy of Manchester University in 1911. His early experience was varied and unusual. At one time or other he was demonstrator in physiology at Manchester University, editor of the Manchester *Medical School Gazette*, lecturer in physiology at the Universities of Wales and Birmingham, honorary physician to Walsall General Hospital, lecturer on psychology at the Birmingham Midland Institute, and director of the typhus colony in Serbia during the first world war as a lieutenant-colonel in the Serbian Army. He contributed numerous papers to medical and psychological journals, and published in 1918 his *Examination of the Basis of Personality*. In 1920 he joined the Cunard Company and in 1926 was appointed its medical superintendent, a post for which he was pre-eminently suited by his rich experience and by natural aptitude and high technical ability. He retired in September, 1946.

From the beginning of his entry into this branch of occupational health his aim was to improve the lot of the merchant seaman, and the outstanding contribution to this end made by the Cunard White Star Company during recent years, with its resulting effect on conditions in the Merchant Navy as a whole, is due in great measure to Dr. Maitland's personal influence. His interest took him beyond the sea and its peculiar hazards, however, and the allied problem of industrial disablement with its economic and social repercussions soon became to him an issue of the first magnitude. In this field his influence behind the scenes was great. It is little known, for instance, that he was one of those initially responsible for the setting up of the B.M.A. Committee on Fractures, whose report in 1935 heralded a new era in orthopaedic and accident surgery; that he was an international authority on workmen's compensation; or that he was a powerful influence in the formation of the policy of the Birmingham Accident Hospital several years before it opened in 1941. One keen ambition of his was to see founded an accident hospital in Liverpool, and to this end plans were continually in his mind. As far back as 1935 his conception of rehabilitation and his clear view of the need for new and comprehensive legislation as the only means of solving issues bound up with resettlement and workmen's compensation were well in advance of contemporary medical and sociological thought.

Dr. Maitland had an unusual capacity for making and retaining friendships. To him this was no easy matter, but, his mind made up, he was a friend for life. He gave much. Behind the apparent physical frailty was a high courage, an obvious integrity, and a deep, consuming energy based on a passionate desire to help the underdog. He was modest to a fault and abhorred publicity. As a host he was beyond compare, a supreme cosmopolitan. But perhaps his most appealing asset was his sense of humour, combined with an uncanny ability to debunk the pedant. It was not in him to suffer fools gladly, but he was essentially a man of gentleness and much understanding. To those whose privilege it was to come within his circle of friends his death means an irreplaceable loss. Medicine can ill afford to lose its philosophers, and Dr. Maitland truly was one of them in high degree. His contribution to the welfare of seamen and disabled workers throughout the country, acknowledged too little during his life largely because of his own wish, now demands nothing less than the fullest recognition.—D. S.

Dr. FRANCIS SUTHERLAND, who died at his home in Edinburgh on Aug. 14 at an untimely age, was an unusual personality with experience of different sides of medical life. He graduated M.B., Ch.B. at Edinburgh in 1917, and took the D.P.H. three years later. His first appointment was concerned with the investigation of an obscure outbreak of typhus which had occurred in Raasay, off the Isle of Skye. He was next appointed assistant county medical officer of health for that part of Inverness-shire which includes Skye, Harris, North and South Uist, and Barra, perhaps the most difficult and thankless post in Great Britain. For ten years he travelled to and fro across the Minch in small steamers, inspected school-children, dealt with the inertia of Hebridean authorities, and struggled with the petty round of nuisances and small epidemics for which there was no hospital accommodation, no health-visiting, and no hygienic routine. In these difficult circumstances Francis Sutherland maintained a lofty standard of official procedure. He knew the law, he knew what was correct, and, using a typewriter, he constituted himself a one-man public health department and kept a voluminous correspondence unsurpassed by many who have a trained clerical staff. After a similar though less insular appointment in Ross-shire, Sutherland decided to enter the field in which his father, Dr. John F. Sutherland, had preceded him, that of administrative psychiatry. He opened a small residential clinic at Staines. But when the post which his father had held at the Scottish Board of Control fell vacant, Francis Sutherland took the opportunity then offered him, and in 1936 he became deputy commissioner of the Board of Control for Scotland. This sphere of work, which exactly suited his temperament, so that once again he was journeying through the Highlands, occupied the last twelve years of his life. His broad figure, in plus fours, cap, and a bow tie, became well known in Highland cottages and hotels. He always used great formality of language, indeed he spoke to patients—wards of the Board of Control—as physicians did a generation ago, before modern slang was part of professional relationships. But he was always smiling, courteous, and helpful, and his human kindness showed itself to the last word of his official report. There was quality and style in all he did, and he never hurried, never ignored details, never allowed himself to be put off. When he had finished, the case was complete and unanswerable. In the evenings few could relax better, or tell more humorous stories about Scottish ministers, or quote classical poetry and prose with more point. Whenever he could, with Mrs. Sutherland who survives him, he took a holiday on the Continent that was a sort of exploration, since beforehand in his usual thorough style he had studied the geography and the language. In this way he penetrated as far as the North Cape and studied the coast of Spain and Portugal. When he returned he had many good tales to tell. He was an unusual man who lived conscientiously and did his work unobtrusively, and, though he was not prominent in medicine, his life expressed our best traditions.—H. W.

Dr. HENRY RICHARD BELCHER HICKMAN, who died on July 8 at his home in Flax Bourton, Somerset, was born on April 11, 1866, in London. His father, Dr. William Hickman, J.P., was physician-in-ordinary to H.R.H. the Duke of Saxe-Coburg. Henry Hickman was educated at Westminster School, Christ Church, Oxford, and St. George's Hospital. He graduated at Oxford in 1894, and took the diplomas of M.R.C.S., L.R.C.P. in the same year. After working for some time in the pathological department at St. George's he devoted himself to eye work, becoming a clinical assistant of the Royal Westminster Ophthalmic Hospital and ophthalmic surgeon at the Marylebone General Dispensary. He was one of the pioneers of school medical inspection in London, and for a time was assistant school medical officer under the Buckinghamshire County Council. In 1920 he came to Bristol University as lecturer in physiology and held this appointment until 1932. Dr. Hickman was interested in wireless telegraphy from its earliest beginnings and had worked with Marconi. In 1911 he carried out some of the first tests on anti-dazzle headlights for motor-cars. He was a keen photographer and delighted in colour photography. During his years at Oxford he was a first-class rifle shot, and shot for his University against Cambridge. He was also an ardent Freemason and a past master of St. Vincent Lodge (1404), Bristol. He married Miss Margaret Kate Thompson, and they had two children: a son, who died in childhood, and a daughter, Dr. Rowena Margaret Hickman, who is now practising medicine in Somerset. To his widow and daughter we offer our deep sympathy.—J. A. N.

Dr. STANLEY NINIAN WRIGHT, senior assistant medical officer of health and school medical officer to Lancashire County Council, died on June 26 at the age of 58. He was a native of Liverpool, and was educated at Merchant Taylors' School, where he won a Harrison scholarship, a Lancashire County Council exhibition, and many prizes. Proceeding to Liverpool University he continued to distinguish himself by winning many honours, including the Robert Gee scholarship in medicine, the Torr gold medal in anatomy, and a university exhibition in clinical medicine. Before graduating M.B., Ch.B. in 1912 he took a B.Sc. in physiology with first-class honours. After

spending eighteen months in various resident posts in the Liverpool Royal Infirmary and City Hospital, Dr. Wright obtained his M.Sc. in 1914, and a few months later the D.P.H. The years 1914 to 1919 were devoted to war service, first for a few months in the Army, then as a temporary surgeon-lieutenant in the Royal Navy. Much of his time was spent as resident medical officer to the Royal Naval College, Osborne. Immediately following demobilization in 1919 he became assistant port medical officer to the Liverpool port sanitary authority, a post which he held until June, 1920, when he was appointed to the medical staff of the Lancashire County Council, on which he served until his death. Whatever Stanley Wright did he did with all his heart, whether it was in connexion with his professional work or in the realm of sport, in which he excelled. His successes in academic life were paralleled on the rugby football field and later on the golf course, where he played from scratch and represented his county. His leisure moments he devoted to literature and the appreciation of music. Representative of the very best type of medical man, courteous in approach, skilful in ministration, and of an unfailing human kindness, he will not be forgotten by his friends and colleagues, or by the folk among whom he worked for so many years in Haydock and Prescot. He is survived by his widow and a daughter.

Dr. HENRY DOYLE BRICE died at the home of his younger daughter in Dewsbury on Aug. 7, at the age of 74, after a long and distressing illness. Born in the Channel Islands, he first qualified as a chemist, which enabled him to pay his way through his medical training. He was a student of Westminster Hospital, and won the Frederick Bird medal in midwifery and qualified M.R.C.S., L.R.C.P. in 1900. He started his medical career as a general practitioner in Chelsea, and was soon appointed medical officer to the district and out-patient department of Chelsea Infirmary, medical officer to the Chelsea Distress Committee, and a lecturer in midwifery under the Midwives Board. These appointments he held until he moved to Dukinfield, Cheshire, in 1908, where he proceeded to build up a large practice. Dr. Brice was appointed assistant radiologist to the Ashton-under-Lyne and District Infirmary in 1919. His work in general practice gave him an insight into the needs of the poor, and in an endeavour to improve their lot in life he consented to be nominated as a candidate for the Dukinfield borough council. He was elected in 1922 and served on the council for 26 years, becoming an alderman in 1939 and acting as mayor of the town in 1932. Dr. Brice was also elected to the Cheshire County Council in 1925, and later became a county alderman. On both borough and county councils he interested himself particularly in housing and in maternity work. Dr. Brice was always an active member of the British Medical Association, and he was chairman of the Hyde Division for over ten years. He married in 1904; and his wife, formerly Miss Judson, helped him in all his work until she died in 1938. He leaves two daughters and a son, all members of the medical profession.

Medico-Legal

MENINGITIS FOLLOWING SPINAL ANAESTHESIA

[FROM OUR MEDICO-LEGAL CORRESPONDENT]

In April, 1947, the High Court awarded damages of £12,000 against the Portsmouth Corporation to a young man who contracted meningitis after a spinal injection of "nupercaine" and was left with permanent paralysis of both legs and incontinence of urine.[1] Actions against the practitioners concerned failed. The corporation appealed, and counsel maintained that the trial judge, Mr. Justice Birkett, had disregarded evidence that the infection with *Ps. pyocyanea* could have been caused in spite of all proper precautions to prevent it.

Lord Justice Bucknill, giving the judgment of the Court of Appeal,[2] said that there was sufficient evidence that the patient's injury was directly due to an injection of "nupercaine" into his spinal canal. This had introduced a bacillus which had caused the meningitis, and the cause of the disease was negligence and breach of duty by the corporation's servants in failing to carry out proper aseptic precautions. There was no satisfactory evidence that the syringe had been sterilized in accordance with the usual practice obtaining in the hospital in 1944. The appeal was therefore dismissed.

[1] *British Medical Journal*, 1947, 1, 660.
[2] *Evening News*, Portsmouth, March 24, 1948.

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation held on July 31 the following degrees were conferred:

D.M.—G. I. M. Swyer.
M.CH.—*G. O. Jelly.
B.M.—R. A. Bruce, J. P. Horder, W. G. H. Leslie, M. C. Manifold, D. Razzak, C. G. A. Thomas, H. W. James, A. W. Lindsay, M. G. M. Venables, W. H. Taylor, D. P. Winstanley, N. S. C. Gent, F. D. Kelsey, J. R. Sudbury, F. J. C. Roe, L. Bagratuni, G. E. S. Jones, D. R. Richard, Katharine M. S. Ainley-Walker, Barbara E. Porritt, *D. F. Magee, *H. Ellis, *J. E. Cotes, *P. D. Wall, *P. Harrison-Hall, *M. A. Peyman, *J. Swithinbank, *B. L. Day, *J. N. Micklem.
* In absence.

UNIVERSITY OF LONDON

Sir Francis Fraser, Director of the British Postgraduate Medical Federation, has been reappointed Deputy Vice-Chancellor for 1948–9.

On the occasion of the Congress of the Universities of the Empire, held at Oxford from July 19 to 23, the honorary degree of LL.D. was conferred on James Bertram Collip, C.B.E., F.R.S., Professor of Medical Research and Dean of the Faculty of Medicine at the University of Western Ontario, among others, at a ceremony held at Senate House, London, W.C., on July 17.

The following members of the medical profession have been appointed representatives of the University on the governing bodies of the institutions indicated in parentheses: Sir Archibald Gray and Mr. J. B. Hunter (British Postgraduate Medical Federation, and, for the first year, School of Pharmacy); Dr. D. H. Brinton (Charing Cross Hospital Medical School); Professor S. J. Cowell and Professor Esther M. Killick (King's College of Household and Social Science); Dr. A. E. Clark-Kennedy (Queen Mary College); Mr. J. B. Hunter (Royal Free Hospital School of Medicine); and Professor J. M. Mackintosh (Slough Industrial Health Service, Ltd.).

The following have been recognized as teachers of the University in the subjects indicated in parentheses: *St. Bartholomew's Hospital Medical College*: Dr. R. Bodley Scott (Medicine). *St. Mary's Hospital Medical School*: Dr. M. H. E. Hulbert (Radiology). *London Hospital Medical College*: Dr. J. H. T. Challis (Anaesthetics), Mr. C. A. Keogh (Oto-rhino-laryngology), Mr. W. A. Law (Orthopaedics), Dr. H. B. May (Pathology), Mr. R. C. Percival (Obstetrics and Gynaecology). *St. Thomas's Hospital Medical School*: Mr. R. B. K. Rickford (Obstetrics and Gynaecology). *Charing Cross Hospital Medical School*: Dr. H. K. Ashworth (Anaesthetics), Dr. A. Doyne C. Bell (Children's Diseases), Dr. F. A. Elliott (Medicine), Dr. D. P. King (Clinical Pathology). *Westminster Hospital Medical School*: Mr. F. A. d'Abreu (Surgery), Dr. C. J. Garvey (Medicine). *University College Hospital Medical School*: Dr. H. A. Burt (Physical Medicine). *King's College Hospital Medical School*: Mr. S. G. Clayton (Obstetrics and Gynaecology), Mr. Ralph Cocker, M.B., Ch.B., F.D.S. (Dental Surgery), Dr. A. C. Cunliffe (Bacteriology), Dr. R. D. Lawrence and Dr. S. Oram (Medicine), Dr. D. I. Williams (Venereal Diseases), Mr. A. J. Heriot (Surgery, probationary). *Maudsley Hospital*: Dr. E. W. Anderson (Psychiatry).

The Diploma in Medical Radiology has been replaced by a Diploma in Medical Radiology (Radiodiagnosis) and a Diploma in Medical Radiology (Therapy). The regulations for these diplomas have been approved and copies may be obtained from the Academic Registrar of the University at Senate House, London, W.C.1.

The Worcester Royal Infirmary has been recognized for the purposes of the Diploma in Clinical Pathology for a period of five years from September, 1948.

UNIVERSITY OF LEEDS

Professor James W. McLeod, F.R.S., Brotherton Professor of Bacteriology at Leeds University since 1922, has been appointed Dean of the Medical Faculty of the University in succession to Professor M. J. Stewart, who is retiring owing to the pressure of other work.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Sir Hugh Cairns, Nuffield Professor of Surgery in the University of Oxford, left this country on Aug. 3 to visit the principal medical centres in South Africa as the first Arthur Sims Travelling Professor. He will deliver lectures, make contact with leading scientists, and take part in research and postgraduate teaching. Sir Hugh Cairns arrived at Johannesburg on Aug. 13, at Durban on Aug. 27, and is due at Capetown on Sept. 1. He recently returned from a somewhat similar trip to Australia and New Zealand.

It is confidently hoped that the institution of this travelling professorship will not only do much to stimulate the development of medical science for the benefit of mankind but that it will also prove a further valuable link between the nations of the Commonwealth.

Medical News

Alvarenga Prize

In recognition of his studies on sludged blood the College of Physicians of Philadelphia awarded on July 14 the Alvarenga Prize for 1948 to Melvin H. Knisely, M.D., of the University of Chicago. The Alvarenga Prize was established by the will of Pedro Francisco da Costa Alvarenga, of Lisbon, Portugal, an Associate Fellow of the College of Physicians of Philadelphia, "to be awarded annually by the College of Physicians on each anniversary of the death of the testator, July 14, 1883." The College usually makes this award for outstanding work and invites the recipient to deliver an Alvarenga Lecture before the College.

Foreign Medical Scholarships

Scholarships for study abroad have been awarded to five post-graduate medical students through the British Council. The Belgian Government has awarded a four months' scholarship in tropical medicine to Dr. H. F. Lyon (University of Edinburgh), and another in dermatology to Dr. R. P. Warin (University of Leeds). The Government of Sweden and the Swedish Institute are the donors of a further two four-month scholarships in surgery and medicine; these have been awarded respectively to Dr. C. Dafoe (Queen's University, Ontario) and Dr. J. Scott Baker (University of London). Miss L. Hodgson (University of Leeds) is the recipient of a nine months' scholarship in ophthalmology awarded by the Netherlands Government. The British Council has this year been asked by the governments or universities of nine foreign countries to obtain candidates and make recommendations for some 40 scholarships. Successful candidates are selected as the result of recommendations made by the British Council's Universities Advisory Committee to the country or university concerned.

Quarantine Measure Rescinded

The following Quarantine Notification, No. 15 of 1948, dated July 1, has been issued by the Director, Shanghai Quarantine Service: In accordance with the decision of the W.H.O. Expert Committee on International Epidemic Control on April 17, 1948, and Expert Committee on Quarantine on Oct. 16, 1947, in regard to rescinding of vaccination against plague or typhus as an international quarantine measure, the public is hereby notified that travellers arriving at or departing from plague or typhus infected ports are not required to produce evidence of vaccination against these diseases.

Boards of Governors

Since the publication of the names of the members of the Boards of Governors of Teaching Hospitals (London) in our issue of June 26 (p. 1250), the Ministry of Health has announced that Sir T. Drummond Shiels has been appointed to the Board of the Hammersmith, West London, and St. Mark's Hospitals.

Enzyme Study Award

Dr. Albert L. Lehniger, assistant professor of biochemistry at the University of Chicago, has received the $1,000 Paul-Lewis Laboratories award in enzyme chemistry for his work on the chemistry and metabolism of the fatty acids.

Dentists in the Service

The Ministry of Health states that up to Aug. 7 the number of dentists in England and Wales who had entered the National Health Service was 6,654, out of an estimated total of about 10,000 dentists in general practice.

Waste Straw

Under this heading last week (p. 406) we published a note to the effect that Professor S. Zuckerman, of Birmingham University, had been appointed head of a Government committee to find a use for waste straw. This information was taken from a report in the Press which we now learn is quite inaccurate.

New School for Spastics

A special school for the reception of children suffering from spastic paralysis is to be opened in Edinburgh next month by the Scottish Council for the Care of Spastics. The house which is to be used was bought recently by the Scottish Branch of the British Red Cross Society.

Hospital Contributory Schemes

Up to July 1 thirty hospital contributory schemes have notified the British Hospitals Contributory Schemes Association that they will continue to operate for the provision of benefits ancillary and additional to those provided under the National Health Service Act.

Diphtheria Antitoxin

Emergency stocks of diphtheria antitoxin were in the past commonly held by local authorities' health departments. The power to provide antitoxin was repealed by the National Health Service Act. A few pharmacists hold stocks, but their number is insufficient for all medical practitioners to be able to obtain antitoxin quickly in emergency. Hospitals for infectious diseases also hold stocks, but they are not always conveniently accessible, and the Minister of Health is therefore arranging with boards of governors and hospital management committees for a small stock of antitoxin to be held at a convenient general hospital in any centre of population which does not include a readily accessible hospital for infectious diseases. Executive councils will be notified by the regional hospital boards of the places where the antitoxin will be available.

Hospital Equipment Standards Advisory Committee

The first report of the Hospital Equipment Standards Advisory Committee of the British Standards Institution gives the history of the formation of the Committee, its terms of reference, and a list of the organizations that are represented upon it. The Committee was formed early in 1947 to investigate the need and to make recommendations for the preparation of British Standards for articles of hospital equipment. The report contains an indication of the subjects under consideration, together with notes regarding future activity. It can be obtained from the British Standards Institution, Sales Department, 24, Victoria Street, S.W.1, price 6d., post free.

COMING EVENTS

Association of Medical Records Officers

Week-end training courses for records officers will be held at Cardiff Royal Infirmary, for the Welsh Region, on Sept. 4 and 5, and at the Royal Free Hospital, Gray's Inn Road, London, W.C., for the North-West Metropolitan Region, on Sept. 11 and 12. Interested hospitals in these regions should write to the records officer at the hospital concerned.

London County Medical Society

A meeting of the London County Medical Society will be held at Joyce Green Hospital, Dartford, Kent, on Thursday, Sept. 9, at 3 p.m.

APPOINTMENTS

DEWELL, MARY W., Temporary Medical Officer to Prudhoe-on-Tyne District, Northumberland.

MAYES, JOYCE B. M., Assistant Medical Officer of Health for West Suffolk County Council and Assistant School Medical Officer and District Medical Officer of Health for Sudbury Borough, Hadleigh and Melford Rural Districts.

ROYAL NORTHERN HOSPITAL, Holloway, London, N.—*Physician to Neurological Department*, E. C. O. Jewesbury, D.M., M.R.C.P., D.P.M. *Physicians to Psychiatric Department*, B. Buckley Sharp, M.D., M.R.C.P., D.F.M.; W. Lindesay Neustatter, M.D., M.R.C.P.

TELLING, MAXWELL, D.M., M.R.C.P., Honorary Assistant Physician, General Infirmary at Leeds.

THORBURN, A. L., M.D., D.P.H., Full-time Divisional Medical Officer, School Medical Officer and District Medical Officer for Nantwich, Cheshire.

BIRTHS, MARRIAGES, AND DEATHS

BIRTH

Price.—On Aug. 9, 1948, to Barbara, wife of Dr. A. E. Kingsley Price, of 36, Sion Hill, Bath, a son.

MARRIAGES

Boyle—Smith.—On Aug. 19, 1948, at South Bank, Middlesbrough, Philip Terence Boyle, M.B., B.Chir., of Linton, Wetherby, to Dorothy Smith, of South Bank, Middlesbrough.

Thomas—Kemp.—On June 19, 1948, at St. Margaret's Church, Warnham, Trevor Meyrick Thomas, M.Chir., F.R.C.S., son of the late Dr. and Mrs. J. E. Thomas, of Bangor, to Judith Margaret, youngest daughter of the late Dr. J. H. Kemp, of Horsham, and of Mrs. Kemp.

DEATHS

Bell.—On Aug. 13, 1948, at Ploverfield, Ben Rhydding, Yorks, John James Bell, F.R.C.S.I., F.R.C.S.Ed.

Billings.—On July 30, 1948, at Rocky Bank, Norton Road, Bournemouth, Alfred Meares Billings, L.R.C.P.&S.Ed., L.R.F.P.&S.Glas.

Forrester.—On Aug. 13, 1948, in Ireland, Archibald Thomas William Forrester, M.D.

Hayes.—Recently, Francis Xavier Kendellan Hayes, L.R.C.P.&S.Ed., L.R.F.P.&S.Glas.

Hood.—On Aug. 16, 1948, at Howe Hill, Acomb Road, York, Noel Lockwood Hood, M.D., aged 77.

Hunter.—Recently, Samuel Robert Hunter, M.D.

Jameson.—Recently, James Conway Jameson, M.B., C.M.Ed., D.P.H.

McCauley.—Recently, at "Ashdene," Omagh, Co. Tyrone, James Ewart McCauley, M.B., B.Ch., aged 49.

Nesbitt.—Recently, at Ailesbury Road, Dublin, George Edward Nesbitt, M.D., F.R.C.P.I., aged 66.

O'Byrne.—Recently, Conor O'Byrne, M.B., B.Ch.

Sankeralli.—On June 22, 1948, Esau Jymshed Sankeralli, M.D., D.P.H., of Trinidad, B.W.I.

Welsh.—Recently, William John Warnock Welsh, M.B., Ch.B.

Willett.—Recently, James Hayward Willett, M.D., F.R.C.O.G.

Wilson.—On Aug. 13, 1948, at Old Bennington, Vermont, U.S.A., John Gordon Wilson, M.B., C.M., aged 89.

No. 32

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Aug. 7.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1948 (a)	(b)	(c)	(d)	(e)	1947 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	40	2	20	3	—	66	6	32	2	3
Deaths		3	—				2	—		
Diphtheria	107	13	28	6	—	138	9	48	10	8
Deaths	1	—	—		—	1	—	—	—	—
Dysentery	111	12	30	—	—	78	10	16	—	—
Deaths					—				—	—
										—
Encephalitis lethargica, acute	—	—	2	—	—	1	—	—	—	—
Deaths		1					—			
Erysipelas			24	4	—			20	4	2
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				43					47	
Deaths	23	3	8	1	1	61	5	17	3	4
Measles*	6,879	430	52	46	42	5,488	303	52	185	4
Deaths†			—		—	4	—	—	—	—
Ophthalmia neonatorum	44	5	11	—	—	66	4	14	—	—
Deaths										
Paratyphoid fever	47	3	3 (B)	—	—	7	2	3 (B)	1 (B)	—
Deaths	—	—	—		—	—	—	—	—	—
Pneumonia, influenzal	363	26	1	2	1	225	12	1	1	3
Deaths (from influenza)‡	6	2	—		—	3	—	1	—	1
Pneumonia, primary			113	21				128	18	
Deaths	116	17			6		9			3
Polio-encephalitis, acute	5	1				56	9			
Deaths							1			
Poliomyelitis, acute	38	3	4	2	5	568	84	93	6	33
Deaths§		4					1			
Puerperal fever		—	10		—		1	16		—
Deaths										
Puerperal pyrexia‖	135	10	7	—	—	103	6	11	—	—
Deaths		1					1			
Relapsing fever	—	—			—	1	1			—
Deaths										
Scarlet fever	848	49	134	29	21	680	61	114	18	19
Deaths†			—		—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	10	—	—	4	—	9	—	1	1	4
Deaths	—	—	—		—	—	—	—	—	1
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	3,185	263	11	79	12	1,508	156	51	52	3
Deaths	6	1	1		—	7	—	1	1	—
Deaths (0–1 year)	247	41	40		9	295	44	64	13	15
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	3,586	584	517		84	3,603	562	475	143	89
Annual death rate (per 1,000 persons living)			10·4					9·9		
Live births	7,586	1242	939		242	8,385	1347	1096	465	246
Annual rate per 1,000 persons living			19·0					22·1		
Stillbirths	161	19	31			215	25	32		
Rate per 1,000 total births (including stillborn)			32					28		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

‖ Includes puerperal fever for England and Wales and Eire.

The return of births and deaths in Eire for the week ended Aug. 7 has not been received.

EPIDEMIOLOGICAL NOTES

Poliomyelitis

Preliminary figures of notifications of poliomyelitis for the week ended Aug. 21 suggest that the final figures for that week are likely to be 70 to 75 as against a level of 35 to 40 for the last few weeks. A seasonal rise was to be expected and has often occurred in past years at about this time. It will be recalled that last year the rise began very much earlier, in the week ended June 7, 1947.

Discussion of Table

In *England and Wales* there were 1,332 fewer notifications of measles than in the previous week, and decreases were also reported for scarlet fever 481, whooping-cough 124, and diphtheria 18. The notifications of dysentery numbered 111, an increase of 34 on the week ending July 31.

The largest falls in the notifications of measles during the week occurred in Lancashire 166, Warwickshire 151, Surrey 84, and Kent 81. Very few counties reported increases; the largest were Hertfordshire 38, Cornwall 37, and Cumberland 35.

The decline in the incidence of scarlet fever was fairly general; the greatest fall was reported in the West Riding of Yorkshire, where 65 fewer notifications were made than in the previous week. The greatest changes in the notifications of whooping-cough were decreases of 58 in Cheshire, 36 in Sussex, and 35 in Gloucestershire, and there were increases of 38 in Leicestershire and 24 in Derbyshire and Durham.

Cheshire and Lancashire reported 12 and 8 fewer cases of diphtheria, respectively; other fluctuations in the notifications of this disease were relatively unimportant.

The increase in the notifications of dysentery arose mainly from the experience of Warwickshire and Lancashire; 29 and 37 notifications were made, respectively, representing increases on the previous week of 22 and 26. Of the 29 notifications in Warwickshire, 27 were reported from Warwick R.D., while of the 37 cases reported from Lancashire, Preston C.B. was responsible for 23, Liverpool C.B. for 6, and Lancaster M.B. for 5. Notifications of paratyphoid fever numbered 47, of which 27 were reported from Eastbourne C.B.

There were 38 notifications of acute poliomyelitis during the week in the country as a whole. Of the county boroughs only Bristol and Birmingham reported more than one case; each had 2. The following counties had more than one notification each: West Riding of Yorkshire 4; Lancashire, London, and Warwickshire 3 each; Durham, Essex, Gloucester, Kent, Middlesex, Oxfordshire, Surrey, and Wiltshire 2 each.

In *Scotland* there were 74 fewer notifications of scarlet fever, but, apart from this, changes from the previous week were slight.

In *Eire* a decrease in the number of notifications was reported for measles 41 and scarlet fever 35. There were 43 cases of infective enteritis or diarrhoea under 2 years of age, an increase of 25 largely attributable to Dublin, where there were 16 more notifications than in the previous week.

In *Northern Ireland* the notifications of measles fell by 17.

Week Ending August 14

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 774, whooping-cough 3,458, diphtheria 106, measles 5,897, acute pneumonia 282, cerebrospinal fever 38, acute poliomyelitis 37, dysentery 107, paratyphoid 19, and typhoid 8.

In the Report of the Departmental Committee on Greater London Water Supplies (London: H.M.S.O. Price 3s. 6d.) attention is drawn to the serious danger of water shortage in London if consumption continues to rise. The committee considers that a full and exhaustive inquiry should be made urgently into water resources and prospective demands throughout the area. Simultaneously plans should be prepared for a new major source of supply, which the report states will undoubtedly be needed in the not very distant future. The committee were of the opinion that it is in the interests of public health that the consumption of water should increase (due regard being paid to the avoidance of waste), and they estimate that the eventual daily consumption per head may be 60 gallons in the Metropolitan Water Board's area and 50 gallons in the surrounding area. There were differences of opinion about the best method of administering London's water supply. Two members of the committee (including the chairman) considered that a single all-purpose authority, with full executive powers over both supply and distribution, should be established. On the other hand, three members, while agreeing that a central water authority to control all sources of supply in the area should be appointed, suggested in addition the establishment of four independent joint water boards for the distribution of water. The area suggested by the Metropolitan Water Board as suitable for administration by a single authority has a population of over 10,000,000 people and is at present served by 64 independent water undertakings.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Low Back Strain

Q.—*What is the pathology of low back strain?*

A.—The two expressions "lumbago" and "low back strain" are often used synonymously by the clinician. Low back strain implies that a strain or sprain of the muscles, ligaments, or joints of the lumbo-sacral region has occurred. The strain may be due to: (1) a single injury or repeated minor traumata; (2) mechanical defects and insufficiencies, which make this part of the spine less capable of standing up to normal activities—e.g., congenital anatomical abnormalities (spondylolysis, spondylolisthesis, sacralization of the transverse processes of the fifth lumbar vertebra); and (3) structural changes following such varied conditions as fractures, scoliosis, protrusion of intervertebral disk, or osteoarthritis. The term is thus used to describe a large group of conditions of a mechanical and structural nature involving: (*a*) muscles (sacrospinalis and gluteal muscles and their covering fasciae, when adhesions and contractures have followed inflammation) and ligaments (of the intervertebral and sacro-iliac joints); (*b*) intervertebral disk injuries; and (*c*) joint injuries other than *b*—e.g., strains and sprains of the facet articulations and sacro-iliac and lumbo-sacral joints.

It will be seen, therefore, that low back strain is a very general term describing pain in the lumbo-sacral region. It should be appreciated that there are many other causes of lumbo-sacral pain, which can briefly be covered under the headings "infective," "neoplastic," and "visceral."

Treatment of Jaundice

Q.—*What is the modern treatment for catarrhal and infective jaundice, with special emphasis on the diet? Are magnesium sulphate and a low-fat diet necessary or not?*

A.—The "modern" treatment of infective jaundice is simple: in essence it is to allow the patient to rest in bed until he has recovered. Recovery is complete and rapid in about 95% of cases, in about 0.3% acute necrosis of the liver proves rapidly fatal, and in not more than 5% the hepatitis passes into a subacute or chronic phase, often leaving a permanently damaged liver. There is little evidence that treatment affects the issue in mild cases. A low-fat diet was once *de rigueur*. On theoretical grounds high-protein and high-carbohydrate intake is desirable; it seems as satisfactory, however, to follow the time-honoured precept that "a little of what you fancy does you good." Difficulties arise when prolonged anorexia and vomiting reduce consumption; in such cases the parenteral administration of fluids with hydrolysed proteins and a supplement of vitamins may be necessary. Similar measures are required in acute necrosis. Rest is all-important; precocious exertion can cause relapse, and it seems probable that alcohol may do the same. It is wise to keep the patient in bed until bilirubin has disappeared from the urine and for exercise to be greatly limited until urobilinogenuria is no longer present. No drugs are specifically indicated.

Toxicity of Dioxane

Q.—*In my laboratory we have recently started using dioxane for the dehydration, etc., of histological specimens. How great is the risk of toxicity from dioxane; how can we best avoid it, and what symptoms and signs should we look for? Why is the method not more popular?*

A.—Dioxane is a poison, not only when ingested but also when inhaled. Recorded cases are few in number, but the symptoms of mild poisoning by inhalation appear to be those of "stomach trouble"—anorexia, nausea, and vomiting. Long exposure to dioxane vapour in low concentrations or short exposure to high concentrations will cause liver necrosis and haemorrhagic necrosis of the kidneys, likely to prove fatal in about a week after the onset of severe symptoms. The dangerous effects of dioxane vapour are more likely to be produced under industrial conditions than in the laboratory. If dioxane is used in laboratory processes, however, proper precautions should be adopted, and the staff should be warned of the potential dangers. Barbe (*Guy's Hosp. Rep.*, 1934, **84**, 267) has reported five fatal cases. The chief reason why the method is not more used is that it makes the tissues very brittle, so that some (in particular thyroid) become quite intractable. The speed of the dioxane process is its greatest attraction, but this can be equalled by the acetone-xylol process, which does not make the tissues brittle. In several large laboratories the method has been abandoned for this reason.

Acroparaesthesia

Q.—*Is there any recent development in the treatment of acroparaesthesia? I have in mind a busy housewife aged 45, whose hands are often in water. Since January she has had numbness of the hands and fingers. There is no pain, tingling, pallor, or cyanosis, and no loss of sensitivity to heat and cold, pin-prick, or vibration. For about a fortnight there was a similar sensation of numbness affecting other parts of the body after a bath. The reflexes are normal. Her general health is good, the heart and blood pressure are normal, digestion is good, menses are still regular and normal, and she does not get chilblains. Since May the numbness has almost cleared, leaving a curious sensation of extreme dryness, which she describes as very unpleasant when using her hands. During the warm weather this has improved, leaving only the finger tips affected.*

A.—Acroparaesthesia is a symptom, and treatment depends upon the cause; there is no particular treatment for the symptom as such. In a woman at the menopause the problem demands general and careful overhaul. While an endocrine or functional nervous condition is quite possibly responsible, care must be taken to exclude a nutritional, circulatory, or organic nervous cause, and this may not be apparent without prolonged observation. From the history, temperature would seem to be an exciting factor, and it is just possible that the symptoms are indicative of an incipient dermatitis, perhaps due to household irritants, or to allergic sensitivity to the primula or other plants.

Pruritus Vulvae and Ani

Q.—*How would you treat severe pruritus vulvae and ani in a woman aged 56? She had the menopause at 47 and the pruritus started a year later. The anus is badly torn and fissured from scratching. Itching is unbearable during the day and disturbs sleep at night. She has many symptoms of late menopause—flushes, fatigue, depression, etc. There is a slight amount of sugar in the urine. Treatment by oestrogens has given only temporary relief. Is it dangerous to continue such treatment over a long period?*

A.—The treatment of pruritus vulvae and ani is unsatisfactory unless a cause can be found. The onset of the menopausal atrophy may well have made matters worse, even if it has not caused the trouble. The response to oestrogens is striking, but, as is to be expected, the effect passes off when treatment is discontinued. Complete investigation should be carried out in the hope of finding a cause. In the first place glycosuria, though it is not due to diabetes, cannot be dismissed. It sometimes favours the development of a fungous infection with intense pruritus. Other investigations should include examination of vaginal swabs for fungus and protozoal infections, a full blood count to exclude any form of anaemia, and a fractional test meal to exclude achlorhydria. If the latter is found the administration of hydrochloric acid regularly often has a dramatic effect. If a cause is not found, empirical treatment with large doses of vitamins A, B, and C in turn should be tried, also cod-liver oil applications to the vulva. Frequent warm baths or radiant heat seem to help sometimes, possibly by increasing the blood supply. The continued administration of oestrogens for long periods is not advisable; apart from any other possible disadvantage it will cause uterine haemorrhage. A carefully controlled course, with a gradual reduction in dose, extending over about two months might be tried.

Cinchophen and Neocinchophen

Q.—*How does the toxicity of neocinchophen or allied drugs compare with that of cinchophen? In my experience cinchophen causes digestive upset in a small percentage of patients and giant urticaria in a still smaller percentage. In over 20 years, using cinchophen fairly freely, but given only on three days a week for three weeks, I have seen only two cases of giant urticaria and have had perhaps half a dozen patients complain of gastric disturbance.*

A.—Several observations have been made on the comparative toxicity of cinchophen and neocinchophen. Fürth and Edel (*J. Pharmacol.*, 1935, **53,** 105) found that the daily administration of 0.2 g. of cinchophen per kg. to rats caused a loss of about 20% of body weight in eight days, whereas three times as much neocinchophen was required to produce the same effect. Barbour and Gilman (*J. Pharmacol.*, 1935, **55**, 400) stated that neocinchophen ("tolysin") is "far less toxic to rats than cinchophen, which accords with the extreme paucity of clinical evidence of tolysin toxicity." The lower toxicity was not found to be due to a smaller absorption of neocinchophen. Davis (*Amer. J. med. Sci.*, 1932, **184**, 555) concluded that the superiority of neocinchophen for general clinical use could be fairly assumed from the evidence in the literature. However, in 1941 the Council of Pharmacy and Chemistry of the American Medical Association (*J. Amer. med. Ass.*, 1941, **117,** 1182) stated: "There is no satisfactory evidence on which to base an estimate of the relative dangers in the use of cinchophen and neocinchophen in equally effective doses."

Toxic Hepatitis

Q.—*Is it possible to distinguish clinically or by any other method between the jaundice due to the administration of arsenicals in the treatment of syphilis and the jaundice due to a syringe-transmitted virus?*

A.—Both the jaundice due to arsenicals given during the treatment of syphilis and the jaundice due to a syringe-transmitted virus are forms of toxic hepatitis. There is no certain pathological or biochemical means of differentiating the two conditions; but the incubation period of jaundice due to a syringe-transmitted virus is usually from 80 to 110 days, whereas a toxic hepatitis due to arsenic, if such a thing actually exists, might come on at any time during a course of arsenical drugs. A patient who is receiving antisyphilitic treatment may be incubating infective hepatitis, the incubation period of which is from 21 to 35 days.

Retching and Vomiting

Q.—*I understand that vomiting from cerebral or nervous causes occurs without retching. Is it true that vomiting without any suspicion of retching cannot occur from organic lesions of the stomach? In other words is the absence of retching a valuable sign against organic disease of the stomach in a case in which there has been erratic and variable vomiting over a period of six or more months? Can such vomiting in an adult occur from habit?*

A.—It is clear that vomiting, or "bringing up and ejecting the contents of the stomach by the mouth" (O.E.D.), depends on the integrated action of numerous muscles and is a complex act controlled by the central nervous system whether the exciting cause be some gastric irritant or increased intracranial pressure. Consequently the act of vomiting differs little whatever the cause, but the sensations accompanying the act may differ. It has been said that nausea is commonly absent in "cerebral" vomiting, though clinical experience shows that it is often present. The questioner omits to define his terms and thus his question is difficult to answer. To retch is defined by the O.E.D. as "to hawk, to bring up phlegm, to make efforts to vomit, to throw up in vomiting." If, as seems probable, by "retching" is meant "making efforts to vomit," it is true that organic disease of the stomach causing vomiting is usually associated with retching, but the converse is not necessarily true. "Erratic and variable vomiting" continuing for six months without the appearance of unequivocal signs of organic disease raises a strong suspicion of hysteria; in this sense such vomiting can certainly occur from habit.

Varicose Veins

Q.—*All textbooks consulted give only sketchy details, confined to Trendelenburg's test and contraindications for injection, of varicose veins of the lower limbs. Can you describe (a) the various tests; (b) what each test shows about the deep connexions and functioning of the veins; and (c) the treatment indicated by each interpretation of each test?*

A.—The contraindications for injection are old age and general disease—e.g., diabetes—previous deep thrombosis, or bad history of recurring phlebitis. The various tests—Trendelenburg, Perthes, Ochsner, and Mahorner—are rather academic and not very important in deciding on the appropriate treatment. When the condition has developed beyond the stage where injection treatment is likely to be successful the usual procedure is to tie the varicose internal saphenous vein at its junction with the femoral vein and at the point where it crosses the internal malleolus, and to inject the vein while exposed in the wound with one of the sclerosing agents. For anaesthetized patients 20 ml. of sodium chloride (30%) is suitable. If the external saphenous vein is at fault it is tied and injected in the popliteal space and in the sulcus behind the external malleolus. If a connexion with the deep veins seems to be persisting after this treatment, either just above or just below the knee, it would be wise to put in another ligature in the appropriate place.

NOTES AND COMMENTS

Second Attack of Measles.—Dr. W. L. YOUNG (Heywood, Lancs) writes: I was rather interested in the reply on the above subject ("Any Questions?" Aug. 14, p. 363). While I was of course aware that second attacks of measles were rare, I did not imagine that they were so uncommon as your reply seemed to suggest. In last year's epidemic I attended approximately 100 cases. This year there have been two of those who have had a second attack. In both instances the symptoms and signs were typical, and though there is this year a co-existing epidemic of rubella I see no reason to doubt my diagnosis.

Corrections

In the report of a meeting of the Section of Surgery at the Annual Meeting of the B.M.A. on Friday, July 2 (*Journal*, July 17, p. 155), some of the figures quoted by Lieut.-Col. W. L. Harnett (London) were wrongly recorded. In the first paragraph "only 53 patients" should read "only 83 patients." The first sentence of the second paragraph should read, "When the cases were subgrouped into stages there was a five-year survival rate of 68.2% in Stage I, 43.6% in Stage II, 25.6% (*not* 59%) in Stage III with lymph-node involvement, and 59% (*not* 25.6%) without it." The last sentence in the second paragraph should read, "One hundred and seventy-five patients were treated by radium, with or without surgery, and 26.5% (*not* 63.4%) of these survived five years."

In the annotation "The Reflecting Microscope" which appeared in the *Journal* of Aug. 7 (p. 306) we referred to the work of "Dr. R. Barer, of the Department of Anatomy and Physiology at Oxford." There are of course separate Departments of Anatomy and Physiology at Oxford, and Dr. Barer works in the Department of Human Anatomy.

In the leading article on "Streptomycin in Use" in the *Journal* of Aug. 21 (p. 391) we erred in stating that the M.R.C.'s Committee on Streptomycin decided "to restrict the use of the drug to cases of tuberculous meningitis and miliary tuberculosis." This should have read, "The Committee decided to restrict tests at the outset to a few acute and usually fatal forms of the disease, including tuberculous meningitis in children and acute miliary tuberculosis." The M.R.C.'s Streptomycin in Tuberculosis Trials Committee has since 1947 made a controlled investigation of the effects of streptomycin in pulmonary tuberculosis, and it is hoped to publish the results of this work in the *British Medical Journal* this autumn.

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